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EXCESS PROFITS DEDUCTION.

THE announcement of the Chancellor of the Exchequer cancelling the Excess Profits Tax seems to have caused a feeling of great relief in industrial circles. For several months protests against this Tax have appeared in the Press almost daily, and it was confidently expected that the Government would have to abandon E.P.D. We have been told so much about the crippling effect of the tax upon industry that it would not have surprised us to have heard of a deputation to the Chancellor of the Exchequer to plead with him to maintain it, in order that manufacturers could reclaim a portion of the enormous losses which they are reported to have suffered. There has been a big slump in trade generally and a shrinkage in profits, the blame for which and for the general stagnation is being attributed to this unpopular tax, the last of which we shall not hear of for many years. Whether the enormous sum yielded by the Excess Profits Tax has been drawn from industry or through industry is a point upon which we confess there appears to be some doubt, though the leaders of industry appear to have no doubt that it has been a direct tax upon industry. Twelve months ago fabulous profits were made in spite of the tax, and we rather fancy that the consumer had a large share of the tax handed on to him. High prices were ruling, with the tendency always higher, and nothing could go wrong; profits were used to purchase more and larger stocks, followed by daily applications for more and more capital. The banks began to be more stringent in giving credits, and it became only a matter of time before the accumulated stocks of goods had to be placed on the market at reduced prices to obtain money. In this way a general liquidation has set in, with the probability of a lower basis in prices in the future. Some day it may be demonstrated to us that it was an economic impossibility to maintain continuous prosperity upon a high basis of price, without a continuous—and, in fact, unlimited—source of supply of money for increasing capital. If we believe that a general reduction in prices was inevitable, it is just possible that had the banks acted sooner the losses now would have been considerably less. The E.P.D. without doubt has contributed to force up prices, but it is not necessarily the direct and only cause of the losses, for it must also be remembered that where a firm was liable for this tax the State has contributed to the extent of 60 per cent. toward the losses caused by the liquidation of stocks. We can understand the contention that the E.P.D. may be a direct tax upon industry if the proportion due to the State has been postponed and utilised for buying high-priced stocks. Losses have been made, nevertheless industry must still pay the debt, and assuming these circumstances—which are by no means uncommon—it is hardly logical to blame the tax for an adventure in speculation before it reached the tax-gatherer. Meantime, prices are still falling, a sure sign that trade is bad, and it has been freely stated that it was the uncertainty with regard to E.P.D. which has had the injurious effects upon industry. We hope that this view is correct, though we think it more psychological than economic, since it is assumed that a feeling of confidence may be all that is necessary to cause a resumption of good trade.

The effect of E.P.D. upon the building industry has been of interest and is worth recording. During the war advantage was taken of the tax to enable many firms to erect factory buildings, and the loss to the country on this account must have been enormous. With the stoppage of war-work many of these factories were converted to manufacture for commercial purposes, absorbing more capital from the public and the banks, and even allowing for the fact that the State provided the bulk of the capital for the buildings, it is difficult to see how several of the firms can avoid either re-capitalisation or winding up. In many cases old factories were bought, and, again at the expense of the State, they were put into first-class condition. The point was raised in *The Builder* in October, 1918, that it was a problem for economists as to whether it would be possible for the country to maintain the increase in manufacturing capacity if a large number of war buildings were converted for commercial purposes, and as things have worked out it is providential that the Government building experts managed to erect a number of factories inconveniently situated for labour and transport. Though it is difficult to withhold a grumble at the unnecessary expense upon the construction of these buildings, their obvious defects have been the means of saving some potential manufacturers from temptation and piling up further losses.

Since the termination of the war the Inland Revenue has given much closer attention to the allocation of the costs of buildings in relation to E.P.D., and this fact, coupled with the high cost of building, has undoubtedly been the means of stopping a number of contracts. With a view of avoiding expensive buildings financed out of profits after E.P.D. had been paid, many firms had recourse to engaging their own staffs of workmen to carry out their repairs and small contracts. So far as industrial work is concerned it would seem that with the prohibition of "luxury" building still in force, the expected revival may not be so great as was expected as a result of dropping the Excess Profits Tax, but should there be a period of depression in the trade there are those who have its interests at heart who consider that it will be in a much healthier condition afterwards. It has been a harassing time for all architects and builders attempting to complete contracts under the conditions which have obtained during the past two years. Prices of materials and labour have had constant fluctuation, and delivery of certain materials has been heart-breaking.

Whether the building industry will ever recover the contracts which have been postponed is a somewhat doubtful point: certainly the urgent need for many of the buildings will have gone, and it is quite probable that some clients who did not (or could not) build at the cost prevailing at the time, may some day consider themselves fortunate in that they have been saved from themselves. The client's portion has been hard, for he has had to sign what has been virtually a blank cheque for his building.

With the passing of E.P.D. one of the most important and unpopular of the war measures has gone. This is a step which brings us nearer to our accustomed normal condition, and in a sense it is almost equivalent to the termination of a State control. If industry is satisfied—as it seems to be—we can safely assume that in time the building industry will derive benefit.

NOTES.

Architecture and Commerce.

THE meeting of the Architectural Association on Monday was productive of some interesting speeches following an able address by Mr. Gordon Selfridge on "Architecture and Commerce." Mr. Selfridge holds the enlightened view of so many American business men that good architecture and building pays, and since his business activities have been carried on in this country he has given practical expression of his interest in architecture and the allied arts. His address on Monday, given on page 252, was full of good sense, and though it is possible to take exception to some of his opinions, we think it will be agreed that he is right when he says that the so-called governing classes do not fully realise that the privilege of governing carries with it the responsibility for the happiness of the people of this country. "Take architecture, for example," he said. "We do not find they inspire the public in any way towards a finer appreciation of fine architecture. I think this little school of young men and young women, endorsed by the older architects and those of assured position in London, could formulate a thoroughly well-thought-out policy and do an enormous amount in influencing public opinion in the matter of good lines in architecture. I think it is entirely possible."

Advertising what Architecture is.

WE wonder what will be thought of the following suggestion by Mr. Selfridge? Speaking of the effect of articles in the Press, he said: "Suppose, for example, that a column a night was bought by a body of architects in London for the purpose of putting the needs of architecture before the public in a breezy, readable manner. It is absolutely possible. You can do anything you choose, only you must have a well-thought-out, careful, and consistent line of policy; and that line of action must have a punch which will land in some thousands of people's minds until they get to believe it is true. If it *is* true, so much the better. Try caricature, try jokes, try any methods you choose; you can in time make the poorly composed building looked upon with a certain amount of derision. It is possible. It is entirely possible. And if this Association would take upon itself to do it, and would be willing to do it, it could do a tremendous amount in that direction." . . As proposed by Mr. Selfridge, the "column a night" would, we fear, put a strain on the financial resources of architects; what appears to be needed is some well-thought-out line of policy backed by those who take an interest in architecture—not necessarily architects themselves.

Proposed Visits by the R.I.B.A.

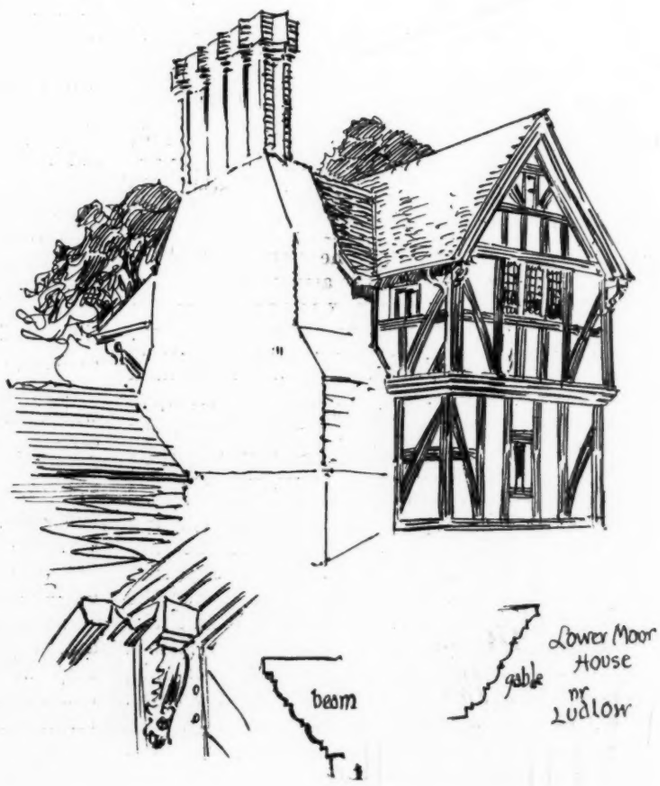
WE are glad to note that the Art Standing Committee of the Royal Institute of British Architects is organising a series of visits to buildings of interest in London and the neighbourhood. The first will take place on Saturday, March 5, at 2.30 p.m., to Westminster Hall, to inspect the work of repair to the roof, which is being carried out by H.M. Office of Works, under the direction of Sir Frank Baines, C.B.E., M.V.O. As the work is now nearing completion so good an opportunity for seeing this most interesting roof and its restoration at close quarters is not likely to arise again for this generation of architects. The number of visitors is strictly limited, and as the names of Members and Licentiates who desire to attend must be known to the authorities, application should be made to the Secretary, R.I.B.A., 9, Conduit-street, W., on or before March 1.

The Verdun Medal.

THE glorious defence of Verdun, which was successfully concluded on February 21, 1916, has been worthily commemorated in the medal struck by the French Government, and shows that the art of the medallist has more scope with them than with us. It is a pity we should not be more influenced by such fine examples, for the story recounted in this month's *London Mercury* of our War and Victory medals is sorry reading. The nickel of which the Verdun medal is made is quite nice in colour and surface, on the front of which is presented a nobly-modelled head of Joan of Arc with the inscription, "On ne passe pas." On the reverse there is a presentation of the gates of Verdun enclosed in a wreath of bay. In its completeness, dignity, and significance this little medal is quite charming, and the shape has just enough play in it to avoid any appearance of being stamped out.

St. George's Chapel, Windsor.

IT would surely be a fair assumption that no Englishman's education could be complete unless he had realised something of the great significance which the St. George's College Chapel, Windsor, carries for the English-speaking race. Here lie buried kings representing all the dynasties of England, here is the very home of chivalry in the Chapel of the Garter Knights, and here also is the flower of the final period of Gothic architecture. Some remains of the original Early English west front are still to be seen, but the chapel as a whole is the product of the early sixteenth century, and contains unsurpassable evidence of the glory of English craftsmanship in stone, wood and iron. The unique value of this beautiful relic of old English building must have been brought into fresh reality to the group of pressmen who followed Dean Baillie round the church on Tuesday whilst he most tellingly recounted something of the history and treasures we have there enshrined for all British folk. It is a pleasure to know that out of his own store of knowledge and love for the



building the Dean has done, and is doing, so much to expound its real value to others. His object on Tuesday was to make it clear that decaying stone will not sustain that nice counterpoise of weights from fan vaulting through flying buttresses, that the vaulting has opened from the walls, and that not only were immediate steps for restoration needed, but that they must be continued for some time even after the generous efforts of the Knights of the Garter have been expended. Besides actual repair and replacing of stone it is proposed to replace stone heraldic beasts on all the upper pinnacles to assist in weighting down the upper parts of the flying buttresses. Nothing is being done except in the most conservative spirit of restoration. We may feel sure that those of the public who realise the intimate value of such a national possession as St. George's Chapel will freely respond to any appeal which may be made to them for help later on. We believe Mr. Harold Brakspear is the consulting architect, and in another column will be found a letter on the subject from the Dean. It is not a little curious to reflect that the poet Chaucer acted as clerk of works on the earlier building in 1390 at a payment of 2s. per day.

"Dead Wood." WE have previously quoted the work of the Forest Products Laboratory of America. Recent experiments are cited to show that what is usually known as "dead wood," assuming, of course, that this is not decayed or attacked by insects, is as strong as seasoned timber from live trees. This is rather startling. Of course, we know that heart wood takes no part in tree growth, but we have always been taught that wood from dead trees is to be avoided as having lost its fibre continuity and become brittle. Will the Industrial Research Department or some other body please clear this up from British experiments?

Wages in the Building Industry. IT is interesting to note that Mr. A. J. Forsdike (President of the National Federation of Building Trades' Employers), at the annual dinner of the Yorkshire Building Trades' Federation, held at York last week, said the representatives of the building trades' operatives were quite prepared to submit to the rank and file a sliding scale for the adjustment of wages in the trade, and the percentages agreed to were satisfactory from the point of view both of the employer and the workman. We are glad to have Mr. Forsdike's assurance on this point, and hope the question will be amicably agreed without recourse to strike threats, which at one time seemed probable. The proposed sliding scale was given in our last issue, p. 239.

Economy and the Municipalities. THE Report of the Finance Committee of the Birmingham Corporation is only a foretaste of what must be the general rule amongst all the municipal corporations. The Report recommends the postponement of the proposed electrical extension and a curtailment of all expenditure. It states that the housing programme has attained results which compare favourably from the point of view of progress with that of any other city, but the burden placed upon the Corporation of financing those schemes compels them to restrict expenditure in all other departments. Housing, like many other undertakings, has not been placed on a sound commercial basis, and if it leads to restricting other undertakings there can be only one result—unemployment will be increased. Extremists are urging that every unemployed householder shall be paid 40s. a week, but no suggestion is made where the money is to come from. It is quite certain that matters will only go from bad to worse unless throughout the whole country sound economic principles can be reverted to, private enterprise encouraged, and Government or other subsidies or doles abolished. Lastly, Rent Acts and all restrictive legislation should be repealed at the earliest possible date.

Ex-Soldiers for Building. WE hear that the Executive Committee of the National Federation of Building Trades' Employers are recommending the Federation to agree to the proposals of the Government that employers should take into the industry 50,000 ex-Service men. It is intended to take a vote of the members of the Federation to give authority to the Executive to carry out the proposals. We are not surprised that the Executive Committee have come to what we understand is a unanimous decision in the matter, and we hope that the members of the Federation will give them the necessary support.

Statuary Group at Florence.

GENERAL NEWS.

Professional Announcements.

Mr. John A. Dempster, A.R.I.B.A., has entered into partnership with Mr. P. C. Boddy, M.S.A., and the firm is now practising as Messrs. Boddy & Dempster, at 85, New Oxford-street, W.C. 1.

Mr. C. Cayley (late Captain in H.M. Forces) is now in practice at 3, Conisclife-road, Darlington, under the style of Cayley, Lowry & Co. He would be glad to receive manufacturers' lists, &c., for office reference.

Mr. E. Godfrey Page, A.R.I.B.A., having severed his connection with the Ministry of Health, has resumed practice at 11, Grey's Inn-place, W.C.

Appointment.

Mr. John Watson, F.S.I., of Cogan Chambers, Hull, has been appointed Rating Surveyor to the Assessment Committee for both Sculcoates and the Hull Incorporation for the Poor, in place of the late Colonel W. H. Wellsted.

Mycenæan Palace Discovered.

It is reported that a palace of the Mycenæan period, in a good state of preservation, has been discovered as the result of excavations at Pagasæ, in Thessaly.

The Rebuilding of Rheims.

The Municipal Council of Rheims has been advised by the Minister for the Devastated Regions to issue a first loan for a sum varying between £8,000,000 and £20,000,000, for the purposes of reconstruction.

The Office of Works and Housing.

Supplementary Parliamentary Estimates for a further £9,352,400 were published on Monday. The vote for the Office of Works is for £549,000, £63,000 being for the expenses of additional staff for building houses for local authorities under the Government housing schemes.

Mediæval Pottery Kilns Discovered.

Two mediæval pottery kilns have been discovered at Newport, Pembrokeshire. One is being preserved intact with an entrance from the new war memorial hall which is being built on the site. Two specimens of fourteenth-century pottery were discovered at Newport Castle about sixty years ago during excavations.

The Society of Architects' Atelier of Architecture.

Monsieur J. P. Chaures' connection with the Society of Architects' Atelier was temporarily interrupted owing to his being on service with the French Army, during which time he was severely wounded. The Beaux Arts Committee has in the meantime kept open his place in the Atelier, and, though at one time it appeared doubtful whether his health and his professional engagements would permit of his returning, these obstacles have been overcome, and he is on his way to England to take up his work again. A meeting of members and friends of the Atelier is to be held at 28, Bedford-square, W.C. 1, on March 1, at 8 p.m., to welcome Monsieur Chaures, when those interested in architectural education are invited to be present.

The Abuse of Advertisements.

At a conference held at Olympia last week, Mr. John Bailey (Hon. Treasurer, the Scapa Society for Prevention of Disfigurement in Town and Country, and Vice-chairman of the National Trust for Places of Historic Interest or Natural Beauty) said the abuse of the system of advertisement was a universal nuisance. Houses and fields and hedgerows were vulgarised and deprived of all their charm by flaring posters or metal plates shrieking at the passer-by in a way that left no power of escape. The Act of 1907 had been adopted by thirty-five counties and forty-eight urban areas, and by-laws made under it were now in force over a large part of the country. No one proposed to abolish bills and posters altogether, but two or three large boards placed in spots selected by the local authorities at the various entrances to a town would give the traveller all the information he desired in a moderate compass without being an eyesore to the community.

Cost of Building in Scotland.

The Committee of Inquiry into the high cost of building working-class dwellings in Scotland held its first meeting on February 22, in Edinburgh. Sir George McCrae said the Government was seriously concerned at the tremendous rise which had taken place in building costs during the past few years, and in view of the very heavy commitments of the State in its housing policy and of the serious financial condition of the country, it was of the first importance that the problem of building costs should be thoroughly examined with a view to reducing costs if possible and eliminating any extravagance that might exist. He urged the Committee to do everything possible to facilitate the presentation of a report.

Mr. Currie (Chairman) said no effort would be spared to produce, as soon as possible consistent with thoroughness, the report of the Committee. The total financial commitment of the State on Scottish housing schemes was 17½ millions, and that figure was rising. There were three factors which illustrated the fluidity of the problem—first, the fall at present in the cost of living and the effect that fall might have on wages; second, the discontinuance of the Excess Profits Duty; and, third, the influence exerted on the minds of contractors, operatives, and the public by the impression that the housing problem was a matter for solution in a year or two at most.

The Committee decided to collect evidence from the various Government departments concerned, from local authorities, trade associations and associations of operatives, and also from individuals. The Committee will receive written evidence and will examine witnesses. Provisionally it has been decided that the Committee will meet two days a week. Mr. Niven F. McNicoll, of the Scottish Board of Health, is Secretary of the Committee, and all communications should be addressed to him, at 125, George-street, Edinburgh.

"Young Workers in London."

Sir Robert Blair, Education Officer of the London County Council, addressed a meeting of the Skilled Employment and Apprenticeship Association on Tuesday last, on "Young Workers in London." He said that at a census of young persons taken last June, out of an estimated number of 316,000, after making deductions of 100,000 for various reasons, it was found that 206,000 were employed. This number was almost equally divided between boys and girls between the ages of 14 and 18, 30,000 of whom came in every day from outside London. The trades were divided into five categories, *i.e.*, clerical, technical, porters, messengers, &c., shop assistants, and others, technical work claiming the largest percentage. In speaking of the aims of the Association and the help it rendered to the education authorities in placing the young persons in skilled trades by apprenticeship, he said it was necessary that its benefits should be placed at the service of the parents and children to advise them in the choice of work, and in order to do this and that the nine years spent in the elementary schools should not be wasted, it was necessary that the Association should have more voluntary help. The latest return showed that of 12,000 girls and boys who left school last Christmas 7,000 were out of employment, which was very serious.

COMPETITION NEWS.

Glasgow.

FOR THE HIGH SCHOOL OF GLASGOW.—Designs for a war memorial. Sending-in day, March 31. (See advertisement December 31.)

Rothesay.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial. The sending-in date for this competition has been extended to March 26 (see our issue for February 4). Members of the Society of Architects are requested not to take any part in this competition without first ascertaining from the Society that the conditions have been approved.

Leigh.

Members of the Society of Architects are requested not to take part in the Leigh (Lancs.) War Memorial Competition without first ascertaining from the Society that the conditions have been approved by the Council.

Campbeltown.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial. Sending-in day, April 8 (see advertisement Feb 4).

Royal Engineers' Memorial.

FOR THE R.E. WAR MEMORIAL SUB-COMMITTEE.—Design for a war memorial. Sending-in day, March 17. (See our issue for November 19.)

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE following notes are from the minutes of the Council meeting on February 14th:—

H.R.H. THE PRINCE OF WALES.—The Prince of Wales has consented to accept the Hon. Fellowship of the Royal Institute, and the nomination will be submitted to the General Body in due course.

THE R.I.B.A. LIBRARY.—The Council is considering a scheme prepared by the Literature Standing Committee for improving the accommodation of the library.

CONDITIONS OF CONTRACT.—The Council has appointed a Committee for the purpose of meeting representatives of the Institute of Builders and the National Federation of Building Trades' Employers to discuss the position with regard to conditions of contract.

HOUSING IN RURAL DISTRICTS.—Arrangements have been made for the appointment of a member with special experience in rural housing schemes to assist the representatives of the R.I.B.A. in negotiations with the Ministry of Health.

R.I.B.A. GARDEN PARTY.—A Garden Party will take place on Peace Day, 1921, on the same lines as the function of last year.

THE GODWIN BURSARY, 1921.—The programme of the tour of Mr. C. B. Pearson (Fellow), as Godwin Bursar, 1921, has been approved. Mr. Pearson will travel in the United States to study the planning and construction of hotels.

Eighteenth-Century Staircase.

The College of Estate Management has presented to the Victoria and Albert Museum an eighteenth-century wrought-iron staircase from the new house of the College, 35, Lincoln's Inn-fields. The staircase is considered to be the work of a pupil of Jean Tijou, the French smith, who worked at Hampton Court and St. Paul's Cathedral.

North London Railway War Memorial.

We are informed by the Hopton-Wood Stone Firms, Ltd., that the memorial erected at Broad-street Station to the employees of the North London Railway Company who fell in the war is in Hopton-Wood stone, and not freestone, as stated in our last issue.

ARCHITECTURAL SOCIETIES.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.

Architectural Design.

"Some Notes on Architectural Design" was the subject of a lecture given by Mr. H. W. Hobbiss, A.R.I.B.A. (Lecturer to the Birmingham School of Architecture), at a meeting of the Nottingham and Derby Architectural Society on February 15. Mr. H. G. Watkins, F.R.I.B.A., President, occupied the chair.

According to a report of the meeting we have received, Mr. Hobbiss said architectural education was becoming more and more important. The intelligent public were taking greater interest in things architectural than the preceding generation, and it behoved the profession to look to the conduct of this education from all points of view. After mentioning the various architectural schools throughout the country, the lecturer described the Birmingham School of Architecture. He said the training of the young architect at present consisted in being bound for a term of years to a recognised architect. During that time he was expected to acquire the technicalities of his profession, and it was now recognised that the great principles underlying the art should be understood and learnt at the outset of a young man's career. The teaching of architectural design was to a large extent a process of elimination or the correction of psychological inaccuracies, and while a design might be suitable for use there were other qualities necessary to make it an architectural composition, such as strength, beauty, proportion, style, grace, appropriateness, colour, mass, etc., which every great architectural composition past or present should embrace. He failed to see how it would be possible for a young architect to accomplish anything except through the study of the methods of the past.

He did not agree with the opinion that if only past work was studied only copies of the past would be reproduced. He agreed with Sir Joshua Reynolds, who said: "The more .... extensive your acquaintance is with works of those who have excelled, the more extensive will be your power of invention." The materials of to-day were the same as those used since the days of Darius, with the addition, of course, of steel and reinforced concrete. They, therefore, built with one eye on the methods of their forefathers and one to the requirements of the present. Architects were accused of paying too much attention to the past. That they in a great crisis (the late war) rose to the occasion and provided and adequately provided buildings needed for purposes hitherto unthought of was a sufficient answer to those criticisms. They could not possibly design without reference to what had gone before, and the greater their knowledge of history and construction the greater their power of design.

Dealing with the importance of good draughtsmanship as the medium for expressing design, he said draughtsmanship should be simple and clear and not a sort of tricky cleverness. Good draughtsmanship was essential to good design. He recommended all students of architecture to read works by architectural authors, and while reading mentally to construct the buildings described.

The first consideration in design was the building in the mass. It was specially important to bear in mind that a design represented solid masses of bricks or stone, and the effect of grouping must be considered. Further, a student should be taught to dissect a building and grasp the *motif*, then follow it out and note its variations and the scale and proportions of its parts. Of all the abstract matter which went to produce a good architectural composition proportion was the most abstract, elusive, and difficult to talk about. Generally speaking, there were no fixed rules of proportion. In every city were streets of ugly buildings; all had received considerable thought in everything but the one thing essential to make them, say, presentable. They lacked a sense of proportion. Good proportion was the syntax of design. No good architect should make a mistake in proportion. Combined with proportion was appropriateness as to its environment—a building must look right in its setting. The selection of material was an important point. Restraint in design was the evidence of a perfectly controlled mind. A thoroughly good architectural composition would always give the impression that there was a heap of knowledge behind it. As to the proper application of ornament, it required much learning how and where to use it and when to leave it out. The half-brother to restraint was refinement, which required a delicacy of perception.

There were other qualities which should be found in all good architectural design, such as repose, grace, breadth, scale, and the culminating quality of beauty. That was dependent upon the correct application of all the other qualities in their correct relationship. Only by selecting, arranging, and grouping with infinite care and appreciation, by shaping and moulding the composition with such power as could be attained by study and experience, was the realisation of beauty finally reached.

SOUTH WALES INSTITUTE OF ARCHITECTS.

At a general meeting of the Western Branch of the South Wales Institute of Architects, held at Swansea on Monday last, the following officers were elected for the ensuing year: Chairman, Mr. Glendinning Moxham, F.R.I.B.A.; Hon. Treasurer and Librarian, Mr. H. O. Portsmouth, F.S.Arc.; Honorary Secretary, Mr. J. Herbert Jones, F.S.Arc.; Committee, Mr. J. Cook Rees, F.S.Arc., Mr. C. S. Thomas, F.S.Arc., Mr. H. A. Ellis, F.S.Arc., Mr. Thomas Gibb, M.S.A.; Associated Representative, Mr. G. L. Crocker. Mr. Hubert Rogers was elected Honorary Auditor. The following were elected to represent the Branch on the Council of the South Wales Institute of Architects: Mr. Glendinning Moxham, Mr. J. Herbert Jones, Mr. J. Cook Rees, and Mr. Thomas Gibb. Mr. G. L. Crocker was elected to represent the architects' assistants and pupils.

AN ART CRITIC CRITICISED.

WE have received from Mr. J. F. Carruthers Bell, Lic.R.I.B.A., the following contribution in reference to the exhibition of the Royal Society of British Sculptors, noticed in our issue for February 11:—

"The Royal Society of British Sculptors has just held its first exhibition since the war at the Fine Art Society's Galleries, New Bond-street. Like most other kindred art societies, many of its members have been on active service or engaged in useful war work in connection with camouflage and munitions. One would naturally assume that the first exhibition of works by its members under exceptionally difficult and abnormal conditions of labour and materials would be received and criticised in a generous spirit after the stress and hardships of a devastating war in which architecture, painting, and sculpture were forced between the hammer and anvil of the god of war, and for the time being hammered out of existence.

"Sir Claude Phillips has lost sight of this; at all events he has allowed no such kindly thoughts to permeate his caustic article in the *Daily Telegraph*. The reason for this I cannot conceive, unless it be that a benevolent Providence has so protected his thoughts that they are stifled in the embryo stage, with the result that his criticism conceived in a pedantic vein covers many sins and omissions, and is just what one would expect from a layman embarking on the thorny path of criticising architecture or sculpture without the requisite knowledge of style and technique. Sir Claude even sneers at the name of the Society as being deceptive; in his own words: 'This is a grandiose title: we are led to dream of, to hope for, great sculpture, the result of great aspirations, but our conception is exaggerated and has no relation to the truth. What is here served up is simply a collection of small bronzes, pretty enough in their way but otherwise of no importance.'

"Sir Claude Phillips has strange and contradictory views on art; 'small' works do not count except 'as useful adjuncts of decoration,' while in his next outburst he performs an artistic acrobatic *volte-face* by comparing the want of 'vital force' of the British school with the Italian Renaissance. In his own words, it is 'this peculiar quality that *makes so infinitely precious the small figures and groups* of Antonio Polaiuolo, of Riccio, of Bertoldo, of Francesco de Sant Agata.' The italics are mine, and show how Sir Claude is willing to swallow his own *ipse dixit* in his criticism of the small exhibits of the R.B.S.

"Much of the best work of the Italian Renaissance in bronze, silver, and gold are *small* works of art, things of beauty and joys for ever; often a buckle, a clasp or sword hilt, a reliquary, crucifix, or ciborium; nothing was too small for the great artists of the Italian Renaissance to lavish their skill and genius upon. Why, then, should the same opportunity be denied to the artists of the present day? Our critic has clearly impaled himself on the horns of a dilemma of his own making, where we can safely leave him.

"In spite of Sir Claude's comments on the 'narrow' British school, it is without the shadow of a doubt the finest in the world, both in architecture and sculpture, and in this exhibition were many gems that would compare very favourably with the best work of the Renaissance. Tradition is a bugbear in art and very similar to heredity in biology, equally difficult to eliminate, and this reason alone places British architecture and sculpture in the front rank, if only by reason of our students being devoid of the traditional Baroque and Rococo spirit so characteristic of the Continental schools, and which have a most unhappy knack, like King Charles' head, of turning up in their compositions more or less violent and aggressive, and from which the British school is happily free.

"If Sir Claude 'hopes for and dreams for' colossals at these minor exhibitions he is doomed to disappointment. No sculptor would take the risk, while for the younger men it is impossible. In comparison the painters have the advantage, their canvas and frame costing very little, while a life-size bronze will cost at least £300, and the same figure holds for a block of marble and pointing. With the limited floor-space of our public and private galleries daily becoming less, a colossal work of genius, the result of 'great aspirations,' is likely to become a colossal white elephant even were the means forthcoming. Sculptors have to live; and it is a pity the stock-in-trade of writers is not as costly as bronze and marble, for it would save us the infliction of much of such criticism. One wonders what the reason can be; it is certainly not the uplifting of British art or encouraging lofty ideals, for such criticism is destructive.

"J. F. CARRUTHERS BELL, Lic.R.I.B.A.

"8, Buckingham-street, W.C."

Royal Academy Exhibition.

The regulations issued in connection with the Royal Academy Exhibition, to be held at Burlington House from May 2 to August 6, state that the reception dates for works intended for exhibition are as follows:—Water-colours, pastels, miniatures, black-and-white drawings, engravings and architectural drawings, March 24; oil paintings, March 26 and March 29; sculpture, March 30. Forms and labels for describing works may be obtained from the Academy during the month of March. No artist is allowed to exhibit more than three different works. Small photographs of architecture and architectural sculpture not exceeding half-plate size will be admitted, but only in connection with working-drawings and included in the same frame. Architectural drawings, which are the work of an artist other than the designer, must have the name of the draughtsman clearly inscribed on the mount, but the draughtsman's name will not be included in the catalogue.

CORRESPONDENCE.

Modernism and Design.

SIR,—In their criticisms of the remarks of Professor Lethaby the critics must not forget the great value and importance of the principles he enumerates. One has a sense, in reading the interesting article by Mr. Bagenal, of a certain impatience, as though the Professor wrote with an air of "Victorian" detachment, and was unaware of the difficulties and problems which beset the architect at the present time. It must be remembered that there is no patent medicine which will produce immediate cure, and that it is unreasonable to ask it from the Professor. It is complained that he fails to direct them, and perhaps in regard to present conditions his arguments may seem a little remote from actuality. Without principles we cannot make progress, and it is to the former, that, I take it, his remarks are directed: but we are rightly a little impatient of "ideals" formed away from the hard facts of everyday experience by those who appear to us rather removed from the struggle.

The nose argument of your correspondent in "A Grain of Mustard Seed" is surely very fallacious. The inherited nose of the child is surely not a sham nose, but one of flesh and blood, and he may rightly be proud of it; but our "Classical" and "Gothic" is mostly sham. Though the analogy in this instance does not apply, it does illustrate the nature of tradition, which, like the child's nose, is a living and growing thing. To call it tradition when building "rows of sham-antique Ionic columns" is hopelessly to obscure its meaning, because tradition is of life, not of death; is more concerned with the beliefs, the temper and outlook of the time than with the particular forms which grew out of them. We may measure up and reproduce the forms of the past, but we cannot enlighten them with the same spirit, because they grew out of other times and other needs. What we can achieve is a temper and a method to give reality and meaning to our own needs, and to this, it appears to me, Professor Lethaby well directs us. Could anything be more important or of more salutary influence for the future of architecture?

The Professor points out in his second article how that in building to our own needs we shall, without "shamming Classic or Gothic" make a building which will not only stand up, but be much more like either of them than is the building which we now label "Traditional." For the return to a more natural, spontaneous expression in architecture does not in any sense require that the past should cease to influence us—how should it, since we are constantly open to its influence in the very nature of things?—but that we shall understand it better, and in that sense it will influence us more. In the light of this it is very interesting to notice how very traditional are the delightful little drawings with which Professor Lethaby illustrates his text.

I hope that the subject, which is so vital in its character, will call forth many more different points of view, and further interesting correspondence. It is, perhaps, difficult for older men who have not experienced so directly the dire awakening at the mouth of the cannon which has been the lot of the younger generation to realise the spirit of impatience and revolt against much that has called itself culture in the past, and the enormous difference of outlook growing from it. We need to understand and sympathise with this new spirit, for it holds within it much that is of profound importance to the future

REGINALD HALLWARD.

SIR,—Your footnote under Mr. Wilson's letter in last week's issue of your journal referring to "A Grain of Mustard Seed" in the previous issue, has caused me considerable surprise. As the author of the latter article, I should like to be given the opportunity of correcting any false impression which your remarks may produce.

This article was neither written, accepted, nor published as an "unsigned letter," nor was it in any way intended as a challenge to Professor Lethaby, requiring his answer. It was merely put forward as a message of faith in modern designers, to modern designers, and to counteract the depression which must be caused by the destructive criticism of modern work of which we read so much to-day.

To suggest that I accuse Professor Lethaby of "engaging in a contest of eloquence and style" in writing a series of articles on "Modernism and Design" is, on the face of it, absurd. How can a series of articles by one man constitute a contest? The element of contest was, however, undoubtedly introduced by Mr. Bagenal's reply and by Professor Lethaby's counter-reply, and the eloquence and style were self-evident in both. While I should feel highly honoured if Professor Lethaby were to consider my article worthy of a reply, I must disclaim any intention of drawing his fire.

My article was unsigned in the humble belief that my signature would convey nothing to your readers, but with no desire to conceal my identity.

I trust that in justice to myself you will give this letter some prominence in your next issue.

G. MAXWELL AYLWIN.

St. George's Chapel, Windsor.

SIR,—May I be allowed to announce through your paper that on Easter Tuesday the main part of St. George's Chapel will be closed, probably for three years, in consequence of the necessity having arisen for extensive restoration? The danger is so pressing that the architects would not guarantee that the Chapel would stand for another year without the collapse of the roof, a collapse which would entail utter destruction of the fabric, with all its artistic and historical glories.

Though the Chapel and its precincts stand within the walls of the Castle, they are an ecclesiastical freehold like any other Church property, and consequently public money cannot be spent on them. The Chapter have no funds available for the purpose. They laid the matter, therefore, before the Sovereign and Knights of the Order of the Garter, for whose use and by whose generosity the Chapel was originally founded. It was then decided at a meeting of the Order under the Presidency of H.R.H. the Duke of Connaught: (1) That the Chapel must be saved; and (2) that in view of the financial conditions of the time, as little call as possible must be made on the generosity of the public.

In pursuance of this decision it was arranged to spread the work over four years, and the members of the Order undertook to provide the funds for the first year. A Committee was formed, including some representative men outside the Order, especially the Provosts of Eton and Kings as representing the interest of those great foundations in the Chapel as the burial place of their founder. Of this Committee H.R.H. the Prince of Wales agreed to be Chairman. A subscription was also begun among the members of the Order, which was responded to with the generosity they have always shown towards the Chapel; a generosity all the more striking in the financial conditions of to-day. This subscription, though not yet quite complete, amounts already to £20,000.

When the first notice appeared in the papers many months ago that a restoration would be necessary some of the firms holding the Royal Warrant united in sending me a handsome subscription, saying that they were doing so as an opportunity of giving expression to the gratitude which they, with the whole nation, felt for the great services the King and Royal family had performed for the nation during the war; the restoration of a building so closely associated with the Royal House being a suitable occasion in their opinion for such an expression of feeling. This, with one or two other subscriptions, has brought the fund up to £25,000. As we expect to spend about £2,000 a month, the first year's work is secured. During this year we must try to raise the funds for next year so that the work can go on without check.

During the coming month we shall be glad to give facilities to those who would like to see the Chapel before it is closed, especially to architectural and archæological experts who wish to see what we are proposing to do. During the three years when the choir and transepts are closed the services will be held in the nave. The work is pure restoration, merely the replacing of decayed material. No alteration will be made in the fabric and no restoration included in the scheme which is not necessary for stability. The Committee and the Chapter feel that this is an assurance due to the nation in its present financial difficulties. There is only one apparent exception to this rule. The architect holds, as Sir Christopher Wren urged long ago, that the King's beasts must be restored on the pinnacles, as their weight is one of the counterpoises provided by the original architect to resist the thrust of the roof. The cost is not a very important item. Anyone can see their artistic value by looking at Hollar's print of the Chapel before their removal.

ALBERT BAILLIE,
Dean of Windsor.

The Deanery, Windsor Castle.

Proposed Minimum Salaries for Architectural Assistants.

SIR,—The activities of the A. and S.A.P.U. are having at least one good result in causing quite a flutter in the various professional dovecotes and in drawing attention to matters affecting the public as well as the profession.

The correspondence in the *Edinburgh Evening News* referred to by one writer supports my contention that the public have not the least idea of "how to become an architect." They are not to blame, because, except where the way has been pointed out to them in individual cases, they are left to find out in the costly school of experience. This is a state of things which the Society of Architects hopes in due course to remedy by affording the public some guide in this matter. In the meantime it is my personal policy strongly to discourage the indiscriminate entry of all and sundry into the architectural profession, and to point out to inquirers that it is unfair to the individual as well as to the profession for anyone to be admitted who is not fitted by education, temperament, qualifications, and circumstances to take up a career of this kind.

In regard to professional educational matters, there are exceptions to every rule, and with all respect to any who may differ from me I consider that the pupilage system should be superseded by, or at any rate combined with, training at a recognised school of architecture, and that in any case the potential architect should not be bound for a term of years but should, as it were, take a trial trip not exceeding twelve months in order to ascertain whether or not he is likely to become fitted to discharge the duties of an architect, or whether he would not be better employed in some other calling which would afford him more scope for his abilities. In the latter case he would avoid a waste of time, money, and energy which he would otherwise have to expend in completing an uncongenial contract, or forfeit the premium, and would in the meantime have obtained an insight into a profession which would always be of some service to him in whatever other calling he adopted.

In regard to prospects, which being interpreted by most people means salaries, I suggest that potential architects should be taught to regard the profession of architecture as a healthy rather than a remunerative one, as I understand it can be demonstrated that architects exist longer and in a greater state of poverty than the members of any other profession. As assistants they find that their chiefs have their own ideas on the wages question and regard any attempt to establish a minimum as indicating also a maximum, and when the assistants cross the line and become principals

they find their own scale in like manner regarded by their employers, the public, as the maximum, and consider themselves lucky if they get that, and by the time they have paid the trade union rate of wages for assistants and their other expenses and overhead charges the margin between that and their own minimum wage, if they get it, is so small that they are probably earning less than their chief assistants.

One correspondent states that in his district an architect who is earning £1,000 a year is looked upon as a leader in the profession. This may account for the increase in the "band of hope" locally which he so deplores, but if this idea really prevails it is calculated in my opinion to give the public an entirely erroneous idea as to qualifications necessarily required for leadership in architecture.

In regard to a point raised by a correspondent with reference to some examinations, may I be permitted to point out that the Society's examinations, which are advertised in your columns, are held under conditions approximating to private practice, which not only renders distance no object and reduces the candidate's expenses to a minimum but also enables him to display his qualifications to the best advantage, which in my view is an important point which is certainly not usually possible in a theoretical test conducted in an examination room within a limited time and under high pressure. The Society's method may be more progressive than some people like, but it will appeal to candidates when they grasp its possibilities.

The subjects which I have traversed very briefly contain, I believe, some points of the greatest importance not only to the persons concerned but to the future of the profession, and I hope they will be pursued and developed by others more capable than myself of putting them into a shape which will commend itself to all concerned. They all connote the need for unity of action in the direction of statutory education and registration.

C. McARTHUR BUTLER.
Secretary.

Society of Architects.

Burton-on-Trent Girls' High School Competition.

SIR,—With reference to the criticism in your last issue of the plans submitted in the above competition, one wonders how the author, who is said to be "a school architect of considerable experience," has escaped an acquaintance with the Building Regulations for Secondary Schools published by His Majesty's Stationery Office. I recommend to him the purchase and perusal of this before his next essay in criticism.

In his comments upon the design placed third he states, "There are some strange things in this plan," and he proceeds to cite two instances. The first is that "the only entrance to the w.c.'s is through the lavatories." That is so, and on reference to the aforesaid Regulations, chapter 4, paragraph 116, he will find it stated, "the lavatory may serve as access to the closets." The second instance is that "the only approach to the gymnasium from the outside appears to be through the changing-rooms," except for a second entrance near the staff room. This again is correct and is, moreover, definitely recommended in paragraph 105 of the Building Regulations, which says: "The entrance for the ordinary use of pupils should be through a lobby and changing room so that outdoor boots and shoes are not brought into the gymnasium."

If your correspondent will refer to the plans of modern schools recently published in your journal he will find many instances of the above usages, and possibly other things strange to him.

After this it is perhaps not surprising to be accused of falling into the mistake of putting the lavatories and w.c.'s in one corner of the building when, as a matter of fact, a reference to the plan will show that they are divided into three portions which are placed in separate corners as far apart as possible.

It is appropriate that your correspondent should have approached his task, as he says, "with real sadness," for anonymous criticism based upon inaccurate data does not add anything to the educational value of competitions.

EDWARD T. ALCOCK, A.R.I.B.A.

Loughborough.

[We submitted Mr. Alcock's letter to our critic, who replies as follows:—

"SIR,—With reference to your correspondent's letter in which he takes exceptions to my criticism in your last issue, I do not think there is much that can be said in reply.

"I would point out that whilst the Building Regulations say that 'a lavatory *may* serve as access to the closets,' they do not say it *shall*, and surely, in a school of this size, it would be better for access to the closets to be apart from the lavatories. This would lead to less congestion.

"A similar remark applies to the access to the gymnasium through the changing-room. What the Regulation says is that 'The entrance shall be for the *ordinary* use of pupils,' but there will be other people to visit the gymnasium besides the pupils, and it would not always be desirable that they should have to pass through the changing-rooms. Here again, '*should* be' cannot possibly be construed into '*must* be.' As an instance, is it not quite possible that there may be gentlemen visitors to the school, and should not access to the gymnasium be provided for them apart from that through the changing-rooms?

"As I have not a copy of the design referred to I am unable to go again into the question of the w.c.'s. Unless my memory is very much at fault the w.c.'s *for the whole of the* 340 *senior pupils* were in one place. There were, I admit, w.c.'s for the juniors and for the staff, but I take it that he is not referring to these, as my comments refer to the closets for the senior pupils, as can be seen from the context in my criticism"]

The Building Guilds.

In reply to a question in the House of Commons last week, Dr. Addison stated that the twenty housing contracts so far agreed with the Building Guilds were, he was informed, being carried out satisfactorily as regards progress and workmanship, but until he was satisfied that the Guilds could build houses quickly and economically he was not prepared to sanction contracts in excess of the twenty already in progress.

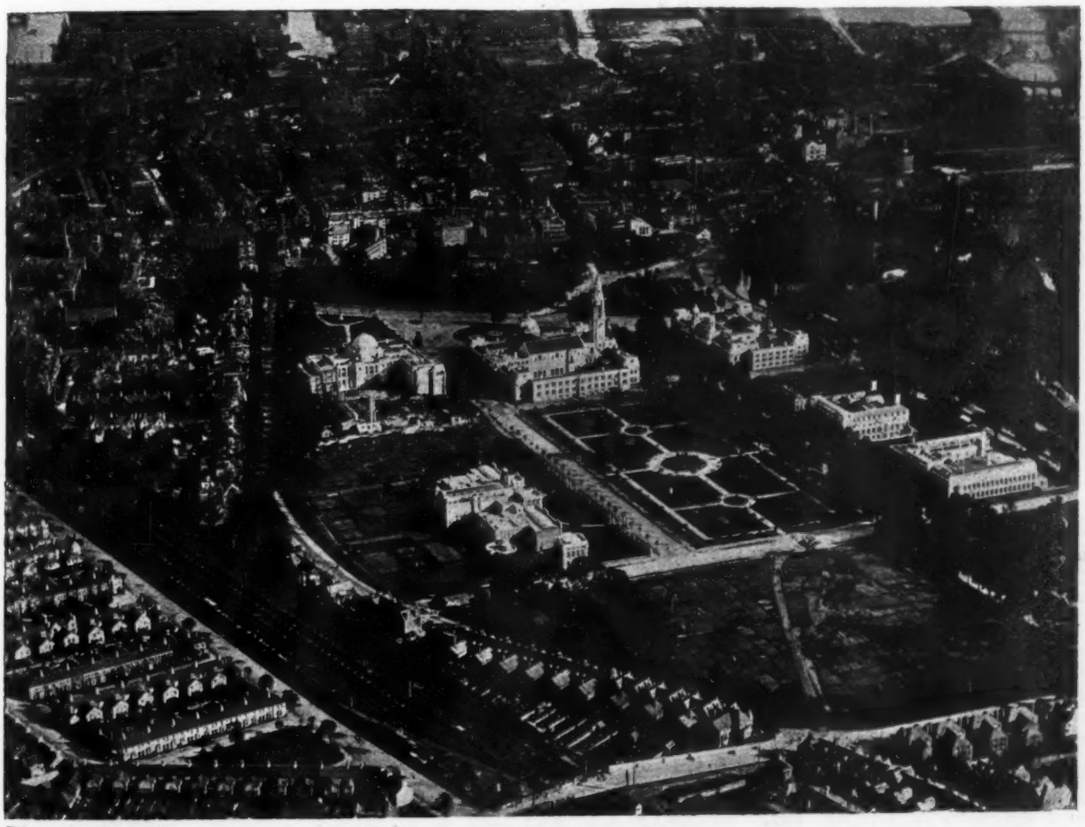


Photo: Aerofilms Ltd.

Aerial View of Cardiff.

A GENERAL meeting of the Architectural Association was held at the Association's premises, Bedford-square, W.C., on Monday last, Mr. G. GILBERT SCOTT, A.R.A. (President), in the chair.

Election of Members.

In accordance with the new procedure at A.A. meetings, the business of the evening was preceded by dinner, after which the following were unanimously elected as new members :—

F. H. Healey,	R. G. Booth,
W. Bayes,	H. A. Cameron,
Oscar Faber,	J. Grey,
H. W. Binns,	E. L. Gale,
S. H. Meteyard,	F. N. Jackson.
G. C. Browning,	

Mr. S. A. Whitehead was reinstated as a member.

Architecture and Commerce.

MR. H. GORDON SELFRIDGE then addressed the meeting on "Architecture and Commerce," and in the course of his remarks said that prince of collectors, Mr. J. Pierpont Morgan, before undertaking a collection of any special line of art or curios, studied under a competent instructor those details which made him intelligent regarding that particular kind of object which he proposed to collect. After such an enthusiast had studied the subject in which he was interested, he necessarily was better informed and very much more intelligent than before. And one wondered, sometimes, why very much that same policy was not more often adopted by those who would inform themselves on both the beautiful and practical things in this life. On that principle, why should not the man who intended to build a building consult an architect in whom he had confidence, and accept his judgment rather than insist upon his own? The architect should really be the physician who prescribed the proper nourishment for the client's mind, and should be sufficiently positive to insist upon that treatment rather than be willing to be a party to doing the poor thing, simply because a client was a little arbitrary and perhaps entirely unintelligent on the subject.

Of all the fine arts it seemed to him that architecture was the most delightful, because it contained many qualities of enormous utilitarian value as well as beauty to a superlative degree. A really fine building was, perhaps, the fifth or sixth most beautiful thing in the world. It also might be absolutely of the greatest use, and it had the quality of permanency which so many of the fine arts did not possess. It was certainly desirable that, when stone and steel were cemented together in a lasting edifice, that edifice should be designed on plans of correctness and on lines of beauty so that the thousands or millions of people who might look at it during its life of perhaps centuries might learn and absorb from it the charm of delightful line, the correctness of school, or the restfulness of the perfect and consistent creation.

As an advocate of the dignity of commerce, and its mighty position in the strength of the nation, he was obliged to apologise for the lamentable absence of quality in the buildings which had been constructed for commercial purposes as a whole all over the world, and England was no exception to that rule. But some of the great commercial edifices of France, whether they might entirely enjoy them or not, were at least creditable efforts of architects and students of architecture in the production of buildings which were suitable both in physical condition and in decoration for the businesses which they housed.

Before the war they were all familiar with the newer commercial buildings of Germany, and that school, which was much in vogue at that time, was really the creation of Dutch architects who had emigrated to Germany. In this modern style was found the somewhat softened lines of the cold and austere architecture of the north. The influence of Sweden and of Finland made itself felt in the architecture of the cities of Germany, and while, to English eyes, perhaps, they were attractive, being consistent in line, they could not look upon them with quite that degree of admiration with which they beheld other schools of architecture.

America—which was first of all a commercial country, in which the merchants took a great pride in their commercial undertakings—had presented, during the past twenty or thirty years, the greatest number of beautiful commercial edifices. The most conspicuous, but as a rule the least beautiful, was that class of building which was the most difficult to make even reasonably good, namely, the very high buildings which were to be found in all the great cities The most pretentious, and probably the most successful, effort of solving the architectural problem of the sky-scraper was the Woolworth Building of New York. Mr. Cass Gilbert was recognised all over the world as an architect of very fine ability, and at the same time one who could not be indiscriminately dictated to by his client, no matter who he might be. He had put into the Woolworth Building, whose topmost point was 750 feet above Broadway, certain Gothic lines which did much to overcome the necessary absence of proportion which any structure must have which was three or four times as high as the width of its lower façade. Another building in New York which was impressive, but which was to the speaker much more utilitarian than beautiful, was the great Equitable Building, whose forty or fifty stories housed an enormous number of people during the working hours of the day.

But getting away from the high buildings, most of which were built simply and solely for occupation, and were unsuccessful in any attempt at beauty, they came to the great railway stations, the hotels, and the store buildings. Imagine the difference to the city of New York which a poor, ordinary, simply utilitarian railway shed would make, as compared with that wonderful and educative piece of architecture, the Pennsylvania Railway Station, which would delight the eye and make the heart beat faster of hundreds and millions of people during its long life. Another railway station, less costly, but by some admired more, was the Grand Central Railway Station in New York. Here, too, absolute correctness of line and school had been followed. The edifice was like a beautiful picture, which by its presence raised that part of the city into the atmosphere of real art instead of leaving it in the materialistic condition of being built physically for the work for which it was required. Other railway stations in Washington, Pittsburg, Chicago and other cities were also beautiful creations, and added to the dignity and quality of the architecture of the cities in which they were placed.

The hotels of America, like everything else there, were likely to be very large and of many stories, but there was running through all of them of recent construction the evidence of the teaching of the Beaux Arts, whose instructions had been so thoroughly grounded in the mind of the architect that he found himself unwilling to include a false note in his design.

The architects of America formed for themselves and their associations principles and policies, and these were absolutely accepted by the public. They had only brought about that result by great, broad ideas, by pulling down and trampling under foot little petty jealousies and bickerings among themselves, and they had proved to a critical public the excellence of their general judgment on all matters pertaining to their profession. No great work was undertaken in any city in America related in any way to architecture in which the judgment and final decision of the association of architects was not sought and almost always followed. The architect was not necessarily the financier, but in all that which touched the fine art of his profession the public recognised that he knew better than they. It was a matter of great congratulation to the American cities that they had this body of splendidly-informed, world-travelled experts, in whose hands could be left safely the decisions on matters pertaining to architecture.

The great store building had during the past 25 years made as rapid progress in the beauty of its architecture as had any branch of that art, because the man of business in America took much pride in the edifice which was to house his undertaking and which was to be his own headquarters or his resting place for a number of hours during each working day. When a business in a large or a small city had reached a position when it might safely undertake the erection of an edifice of greater size and dignity, that work was usually begun. Before it was commenced, however, the architect was selected because of his proved ability and taste, and to him was given the pleasant duty of producing the best thing in architecture which he could do consistent with the cost which the client was prepared to pay. If the client knew little of architecture, he informed the architect that he desired in the proposed building certain general arrangements, but stopped his instructions at that point and felt that the architect, in the question of architecture proper, was better informed than himself. The architect, therefore, attempted the work with more or less of a free hand, knowing that, for instance, that corner pier could be built, if he chose, of sufficient size and evident strength to appear to be able to carry that portion of the building, instead of feeling that he must make that corner a piece of plate glass which, architecturally, was, of course, an abomination. He felt the whole building must be upon piers of sufficiently evident strength to carry the superstructure. He felt that nothing but plate glass on the ground and first floors, which was faulty in construction as far as the apparent strength of the building went, would be a monstrosity which he was not required to subscribe to, and in very many cases he questioned whether any self-respecting architect would be willing to produce a building of that kind, even if his declination was at the expense of losing a client. And so the architect, feeling the responsibility, recognising that it was his privilege to create that structure or edifice, and feeling that a false line would count against him even more than against his client, put into that which he was engaged in producing the best which his ability and experience would permit.

He felt, however, that we had reached, at least in some parts of the world, a period when the architecture of commerce was to be finally put upon a higher plane, and in a hundred years from now commerce, which during all these past years should have done its share towards producing beautiful architecture, but had failed as a whole to do so, would have created for itself and its different members edifices which would beautify the cities and educate the passing, even unthoughtful, mind into the finer lines. Commercial architecture had been, up to a short time ago, the last on the list in quality, being surpassed by ecclesiastical architecture, by public buildings, and by domestic architecture, but in this commercial age and with the continually and very rapidly growing position of importance which commerce and business were winning for themselves, he believed commerce would recognise its responsibility in the matter

of architecture, and would put to its credit many edifices which would be joys and delights to the great public.

Discussion.

A vote of thanks to Mr. Selfridge was moved by MR. H. AUSTEN HALL, who said that when people really wanted the best they invariably got it, and when the patrons of architecture in this country asked for the best buildings they would get them. The prominence of American architects was due not only to their own extraordinary ability and efficiency, but also to the imagination and broad outlook of the patrons who originated the s hemes. That provided great opportunities, and people would always rise to great opportunities—it was to the patrons of to-day and to-morrow that we in this country must look for better architecture.

MR. C. WILLIAMS-ELLIS seconded the vote.

MR. ROBERT ATKINSON said in America the public interest in architecture was really praiseworthy, and it should be the same in this country. American archi ects had not that worship for old buildings which ha l had their day, and which was perhaps carried too far in this country. In England we had suffered enormously through narrow-minded commercial men who erected factories which were unpleasant to look at and unpleasant to work in. Things had got from bad to worse until cities like Liverpool, Sheffield and Birmingham had hardly a decent factory to show. The erection of pleasant, well-lighted, and well-ventilated factories would give a great return in increased output and the better health of the employees. In America nobody appeared to be able to put up a new lamp-post without the consent of the architectural bodies, which had a very considerable influence in all matters appertaining to architecture and town-planning. That was no doubt accounted for by the great interest taken in such matters by the general public.

In reply to a question by MR. A. SMALL as to how architects should proceed to educate commercial men and the general public to demand good architecture, MR. SELFRIDGE said that in London whole-hearted effort would accomplish anything. So far as he could discover, the governing classes in this country had directed their thoughts to nothing but making money. In architecture, for instance, they had done nothing to inspire a finer appreciation of good architecture. He thought architects could do an enormous amount in influencing public opinion, and suggested that they should organise an advertising campaign something on the lines of "Callisthenes'" articles in the daily Press Such a scheme was quite possible, and in time the public could be educated to a proper appreciation of good architecture by that means.

MR. H. A. PAKINGTON said the speaker had put a high ideal before young architects in asking them to refuse commissions rather than put up buildings which did not come up to their ideals. It would be a very nice policy if all architects were idealists; but he was afraid the result would be that the architects who were not idealists would get all the work. In his opinion, a building should not express the architect, but rather it should express the man who paid for it. With regard to the glass shop-fronts, he could not quite understand the objection to them; they appeared to be necessary for the display of goods.

MR. SELFRIDGE said he thought it very much more creditable to decline a job if one had to produce a "beast" of a job to suit an employer. He thought architects should raise the status of their profession by declining commissions they did not like, and although they might find men who would do anything for the sake of a commission, he thought those men would lose more than they would gain by the loss of the respect of their fellow men.

MR. DEBRELL (of Messrs. Lord & Taylor's Store, New York) said the reasons his firm decided to erect the fine building they had at present were a desire to beat their competitors; a wish to display their goods in the best possible surroundings, and to provide pleasant surroundings for their customers and employees: the advertising value of a building which would be talked about; and, lastly, the desire of the proprietors to leave a monument to themselves equal to the ideals they had in commerce.

In reply to a question by MR. SHEPPARD as to whether a building should be an index to the quality of its contents, MR. SELFRIDGE said he thought the building should dignify its contents whatever their nature. Because cheap goods were sold was no reason why the building should be equally poor.

MR. STANLEY HAMP said he was sure the A.A. Schools would have a considerable influence in educating the public to a better appreciation of architecture, although it was surprising to what an extent people already understood the finer architectural buildings.

THE PRESIDENT said the small outlook of British commercial men had always puzzled him—although they had big ideas on Empire and similar matters, men who dealt in millions were niggardly and mean when it came to the cost of a building.

Romagnera Building, Buenos Ayres: Façade. MR. R. R. PRENTICE, Architect.

Leading Contents.

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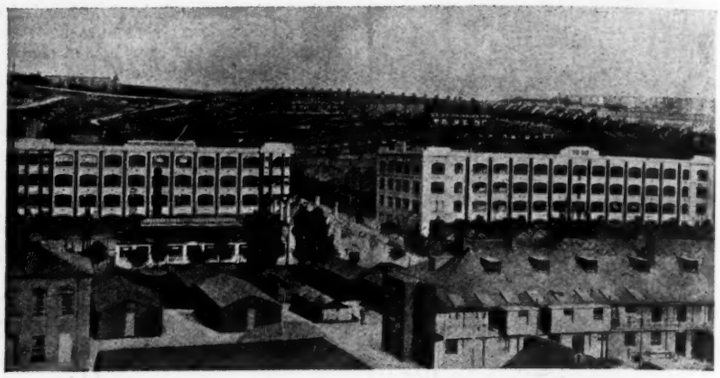


The Oppenheimer Diamond Works, Brighton.
MESSRS. CLAYTON & BLACK, Architects. (*See p.* 255.)

ILLUSTRATIONS.

Tite Prize, 1919-1920.

This design was prepared by Mr. Verner O. Rees for the subject set by the R.I.B.A. for the Tite Prize in 1915 ("An Open Loggia with a Library Over"), and was awarded an "Honourable Mention" in 1919-1920, the year after the Armistice, when the competition was held.

Mr. Rees states: "The general conditions seemed to suggest that some provincial city had been endowed on the death of a wealthy citizen with his library, and wished to house it worthily and agreeably in a public garden. It was for this reason that a style not too divorced from the Renaissance tradition of this country was employed; also, too, the conditions said the design was 'according to the principles of Wren, Chambers and Palladio.' It was thought the loggia and the library could not both be of equal weight in the composition, and an adaptation of the *motif* of the Fontana di Trevi was used in which the library was subordinated to the loggia. The garden, being small and enclosed, was necessarily as open as possible and formal in lay-out."

Hornsey War Memorial.

This design, by Mr. John A. Dempster, A.R.I.B.A., was awarded the first premium in the recent competition. The conditions called for a memorial vestibule, on the interior walls of which the names of the fallen would be inscribed, the building to be on a site adjacent to the Cottage Hospital.

The design illustrated shows a small Temple of Fame set amidst the flower garden of the Hospital. The memorial resembles a small temple set on a base of Cornish granite, the temple being faced with Portland stone dressings and 2 in. mottled brick of approved make. The walls of the interior are finished in Keene's cement with a coffered domed ceiling, and marble panels are let into the walls with inscriptions in lead. In the centre of the temple would rest an ever-burning lamp, the panels and names being visible day and night through the open grilles in the doors. On the left and right walls are suggested two stained-glass windows, which would throw subdued coloured lights into the temple on a sunny day, giving the whole interior a cathedral effect.

Buildings in Buenos Ayres.

Our illustrations this week include views of the following buildings in Buenos Ayres, for which Mr. R. R. Prentice is the architect:—Residence, Calle Esmeralda and Sargento Cabral; the building of La Economia Commercial Insurance Company; and the Romaguera Building.

OBITUARY.

The death has taken place of Mr. J. Russell Burnett, a well-known architect of Inverness, in his fifty-second year. Mr. Burnett received his early training in Dundee, and before joining the late Mr. Duncan Cameron as partner over twenty years ago, he had experience in Edinburgh and Perth. He designed and carried out large residences in the Highlands, the Dornoch and Strathpeffer Hotels, and other large buildings.

The death occurred on February 14 of Mr. John Payne, A.R.I.B.A., of Wallington, Surrey, at the age of seventy-two.

The death is announced of Mr. Charles Lynam, F.R.I.B.A., F.S.A., of Stoke-on-Trent, at the age of 92.

MEETINGS.

FRIDAY, *February* 25.

Glasgow Architectural Craftsmen's Society.—Mr. C. Sinclair on "Housing in the Highlands." At Royal Technical College, Glasgow. 7.45 p.m.

Royal Sanitary Institute.—Mrs. M. Fishenden on "The Use of Open Fires for Domestic Heating." Captain F. S. Sinnatt on "The Present Position of Smokeless Fires." Professor J. Radcliffe on "Air Pollution." At College of Technology, Manchester. 7 p.m.

SATURDAY, *February* 26.

Royal Sanitary Institute.—Visit to Manchester Corporation Housing Schemes. At 2 p.m.

MONDAY, *February* 28.

Royal Institute of British Architects.—Election of Royal Gold Medallist, and Election of Members. At 9, Conduit-street, W. 1. 8 p.m.

Manchester Institute of Builders.—Mr. H. Worthington on "Buildings of Sir E. Lutyens, R.A." At Manchester University.

TUESDAY, *March* 1.

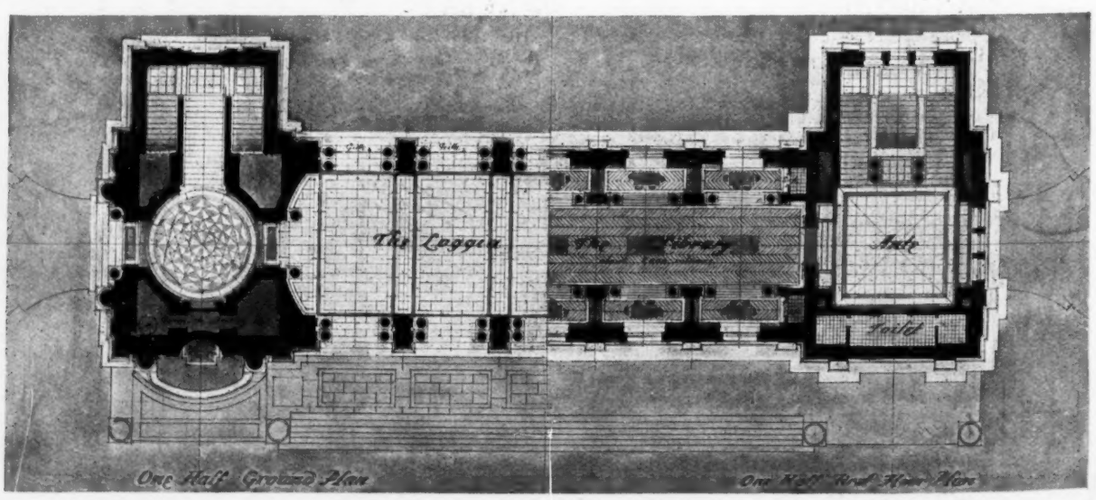
Royal Institute of British Architects.—Mr. J. Hambidge on "Dynamic Symmetry in Ancient Architecture." At 9, Conduit-street, W.1 8 p.m.

WEDNESDAY, *March* 2.

Royal Institute of British Architects.—Major E. P. Warren on "Mesopotamia: Architectural Impressions of a Recent Tour." At 9, Conduit-street, W. 1. 8 p.m.

Glasgow Institute of Architects.—Professor J. S. Phillimore on "Roman Fine Art: Collectors and Connoisseurs of the First Century." At 39, Elmbank-crescent, Glasgow. 8 p.m.

British Museum Lectures on Ancient Architecture.—Sir Banister Fletcher, F.R.I.B.A., on "Early Christian Architecture (A.D. 300-900): Influences, Architectural Character, Basilican Churches in Rome." At Bloomsbury, W.C. 1. 4.30 p.m.



Tite Prize, 1920 (Hon. Mention). Design by MR. VERNER O. REES.

LA ECONOMIA COMMERCIAL INSURANCE CO., BUENOS AYRES.

MR. R. R. PRENTICE, ARCHITECT.

DESIGN FOR THE TITE PRIZE
AN OPEN LOGGIA WITH A LIBRARY OVER
HAEC CIVISVS AD
DETAIL OF ONE BAY & PORTION OF
SECTION·SCALE·HALF INCH TO ONE FOOT
EXVL

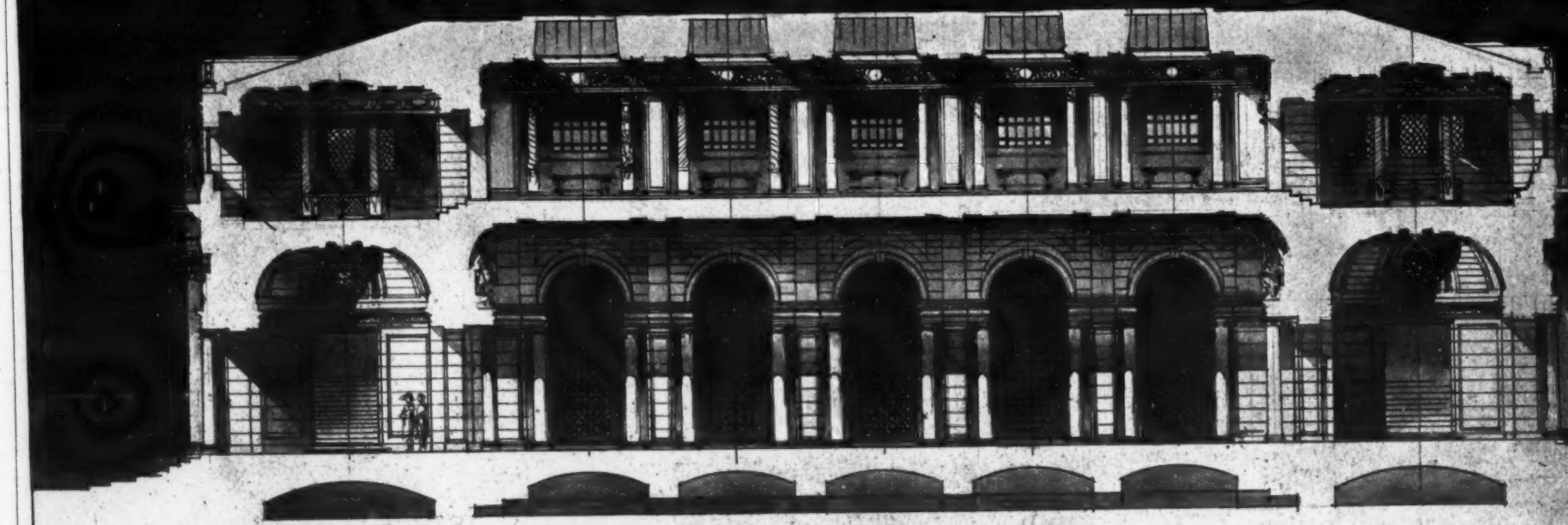
BY MR. V. O. REES.
(HON. MENTION)

DESIGN FOR THE TITE PRIZE 1920

AN·OPEN·LOGGIA·WITH·A·LIBRARY·OVER·

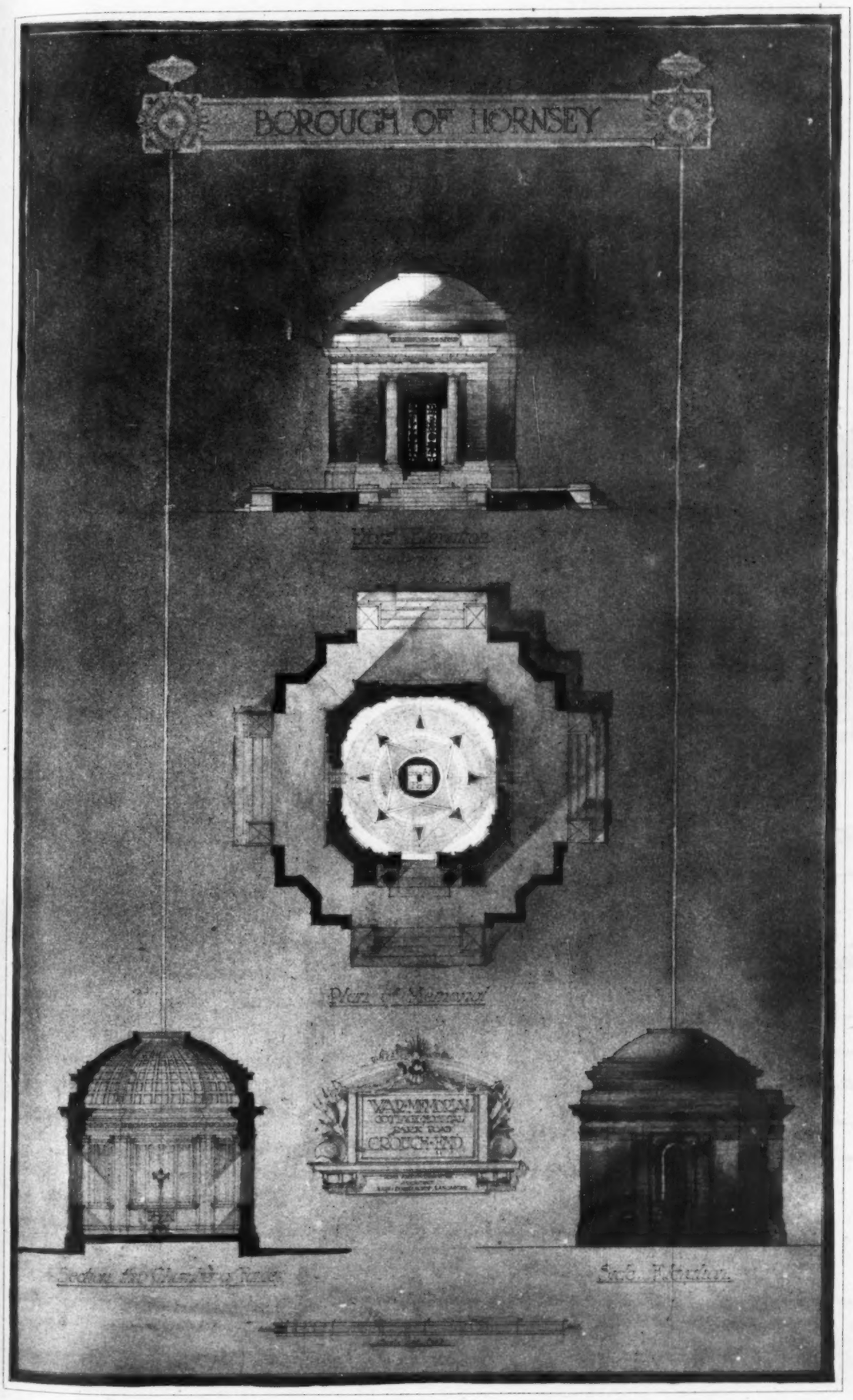
DESIGN FOR THE TITE PRIZE

EN LOGGIA WITH A LITERARY LOVE



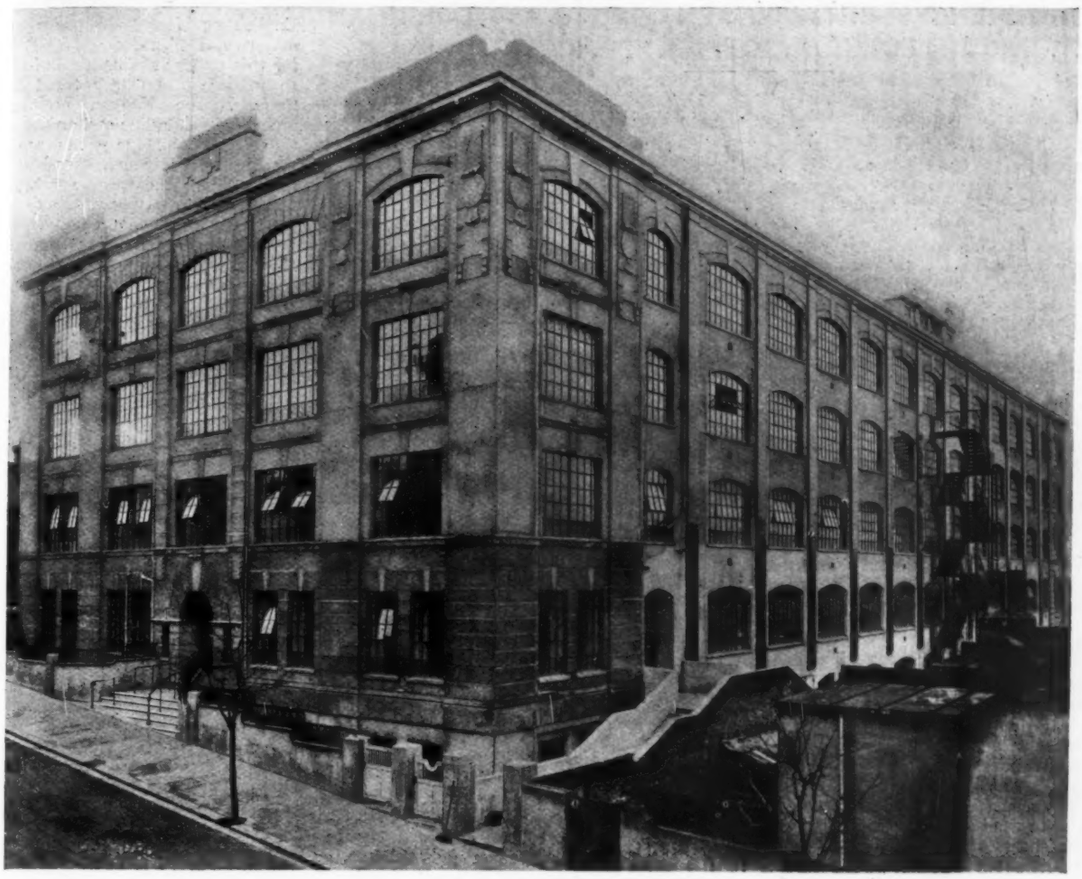
LONGITUDINAL SECTION EIGHTH FEET TO ONE INCH

By Mr. V. O. Rees.
(Hon. Mention.)
1919-1920.

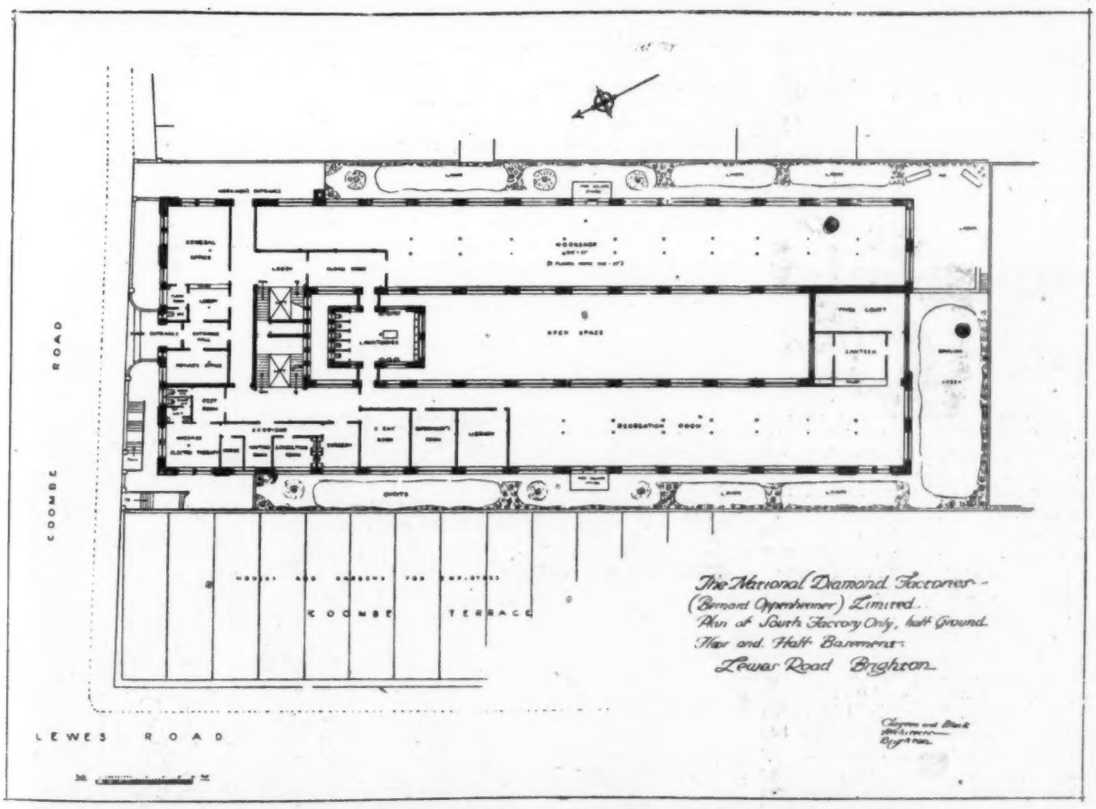


HORNSEY WAR MEMORIAL: FIRST PREMIATED DESIGN, BY MR. JOHN A. DEMPSTER, A.R.I.B.A.

PRIVATE RESIDENCE: CALLE ESMERALDA & SARGENTO CABRAL. MR. R. R. PRENTICE, ARCHITECT.
BUENOS AYRES.



SOUTH FACTORY.



Oppenheimer Diamond Factory, Brighton. MESSRS. CLAYTON & BLACK, Architects.

[This building has been erected at Brighton for Messrs. Bernard Oppenheimer, Ltd., for the employment of disabled ex-Service men in the diamond-polishing industry and was formally opened recently by the Prince of Wales. The factory has been specially designed for that class of work, and consists of long, narrow, well-lighted and white-painted shops. The total accommodation is for 2,000 men, and there is a well-equipped medical clinic for the use of the men who still require treatment.]

SOME DIFFERENCES BETWEEN ENGLISH AND AMERICAN ARCHITECTURAL OFFICE PRACTICE.

By E. W. MARTIN.

(*Concluded from p.* 228.)

WHILE the builder is doing this the draughtsman sets to work to turn out ½ in. scale and full-size details of the cellar window- and door-frames, so that the mill can get them out and the contractor build them into the cellar walls. The English architect, I have been told, does not care to have the door and window-frames put in until the walls are complete, fearing (and his idea seems sound) that the builder might depend upon the window or door head to support the wall above.

It may be interesting at this point, now the actual detailing of the job has begun, if I describe the usual American method of getting out details. In many of the offices it is customary to draw all these in pencil on standard size sheets of Bond paper, transparent enough to print from. In the lower right-hand corner of these sheets the name, address, &c., of the firm is printed by the people supplying the paper. There is also space left for the draughtsman to insert the name of the job, scale, title, number of sheet, and his own name or initials. This method of confining the title and number of the drawing to the lower right-hand corner is extremely convenient, because, when the sheets are all lying in a drawer in their numerical order, is is easy to go through them and find the drawing required without removing any of them. Very frequently the drawers are built to fit the size of the sheet which the office is accustomed to use. The advantages of a standard size sheet are numerous. Anyone who has never used them is usually sceptical as to whether they are practicable, as to whether it is possible to get all the details on sheets of the same size. I know I had my doubts about it at first; but I was surprised to learn that if a little forethought was exercised as to the arrangement of the drawing one was able to adapt almost any of the ordinary details to a standard size sheet. There are some full sizes, of course, which are far too large to go on a sheet of anything like average size; but these are the exception. My own experience in the matter has been that, after I had become accustomed to the standard sheet with the printed title, I found when I came back to the method of drawing on various sizes of paper that it appealed to me as being extremely slipshod. It irritated me to see a drawer full of all sizes of drawings—big, little, and medium. The little ones are always being smothered under the larger ones, so that you cannot find them. If occasion demands that you issue a small detail to the builder you can draw it on the part of the sheet near the title, enclosing it with lines, and writing on the drawing the words, "Print to these lines only." Then, when another small detail comes up, draw it on the same sheet. From practical experience I can certainly advocate the adoption of a standard sheet with a printed title. The latter (which saves a great deal of the assistant's time) may be done in an architectural script, and with lettering sufficiently distinguished in character to suit the most artistic taste.

But to return to the sheet showing cellar door- and window-frames. After the draughtsman has drawn a ½-in. scale elevation of each type of frame, and explained it with full-size sections through the head, jamb, and sill, he does something which I do not believe it is common practice to do in England (I speak under correction, however), and that is, he adds a door and window schedule (pronounced in England, "shedule"; in America, "skedule") in which he tabulates the following information: the number of the opening taken, as I have already mentioned, from the ½-in. scale plans; whether it is a door or window; if a window, whether a double-hung or casement, and the number of lights it contains; if a door, the number of panels it contains, and whether it is a sash door, or any other information he may consider relevant. This schedule, assembling as it does all the information about the cellar frames, greatly facilitates the work of the mill (called the joiner's shop in England), the contractor, the architect, and his staff.

The next step is to detail all the windows and doors for the job. There is no difference here between English and American practice except the use of the schedule which I have just mentioned. While I am on the subject of windows, however, I should like to say that I think the English architect probably devotes more thought to determining the most suitable size of lights than does his American compeer (I speak essentially in generalities). He experiments a great deal with sizes differing but little in order to get the opening of the window itself just right, and also to obtain the most beautiful proportion in the individual panes. It is such attention to details which helps to give English domestic work its peculiar charm—a charm all American architects freely acknowledge. But I fear I am straying from office practice to the realms of æsthetics.

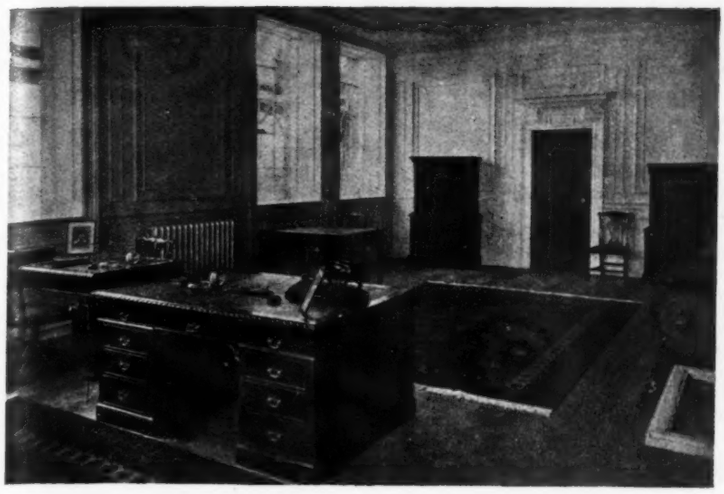
In the matter of drawing ½-in. scale details of the entire job, I do not think there is much difference between the practice obtaining across the water and here. There is, of course, the matter of delineation of different materials; but I shall take that up when I come to the subject of blue-prints. Nor have I discovered any great differences in the matter of full-sizes. I have found in England the same careful attention given to profiles, the same desire to give each moulding exactly the right feeling, the same indefatigable rubbing out and correcting in order to obtain the desired results—all of which is also characteristic of the best American work.

The drafting-room routine ends with the full-sizes, and by the time this stage is reached the contractor is in possession of a set of working drawings which are as complete and accurate as it is possible to make them. I must, however, correct my statement that the work ends with the full-sizes. I meant to say it would end there if it were not for changes. But changes are characteristic of American practice, as of English. Indeed, I once heard a harassed assistant over there define architecture, not as "the art of building with firmness, commodity, and delight," but as "the art of rubbing out and making changes." Certainly his definition seems to be very apt at times.

And now I come to what seems to me a great difference between English and American practice, and that is the use of blue-prints. I do not say that blue-prints are not used in English offices. I am quite aware that some English architects do use them; but the majority, I think, do not. I cannot account for this unless it is because of an unwillingness to render unto Cæsar the things which are Cæsar's. The English architect feels that architecture is a fine art, an artistic calling, and that although blue-prints are all right for machinists, engineers, ship-builders, &c., they are not just the thing for architects. He is not willing to pay any tribute to the practical requirements of his calling. For blue-prints are certainly eminently more practical than the white-prints used so extensively in English offices. But, as I say, the English architect feels that the former are not artistic. He would not word it that way, perhaps; but that is what he feels. So he sends his tracings to the printers, gets two or three sets of black line prints on a white ground, and turns them over to an apprentice to colour. The apprentice does so. He colours brick red, stone gray, concrete green, wood yellow, plaster purple, &c., and when he has finished his effort looks not unlike the cubistic utterance of an ultra-modern painter trying to express the cosmic urge of a rythmic entity—whatever that means! Because the average young man at the time of his apprenticeship is something like Peter Bell: Yellow is yellow to him, "and it is nothing more," and the same with red, purple, and green. So I think it can scarcely be claimed that coloured prints of working drawings are artistic. They may be if the chief assistant, with his feeling for colour harmony, colours them in; but think of the waste of time for the chief assistant to be colouring prints! The English architect might call attention to the time it takes an American draughtsman to hatch brick, stipple stone, &c., on the original tracing. Granted, it does take time, but when it has been done once there is no need to do it again. The indications for different materials occur on every print whether you get one made or a hundred. No, I tried hard at first to see where white-prints were as practical as blue ones, but I could not, and I cannot now.

Consider the matter of changes. Suppose the architect comes into the draughting-room and says to an assistant, "Wright, we've decided to make this wall a 9 in. wall instead of a 13 in. Just change it on the original and all the prints, will you please?" The assistant gets about it, and it is no easy matter, because the black line on white paper is hard to remove. Perhaps, when the change has been made, the boss may come in again and casually remark, "We've decided to let that remain a 13 in. wall after all, Wright. Just change it back again, will you please?" The assistant does so on the original and all the prints, and to analyse the psychologi-

Oppenheimer Diamond Factory, Brighton: Entrance to Canteen.
MESSRS. CLAYTON & BLACK, Architects. (*See p.* 255.)



Oppenheimer Diamond Factory, Brighton: Board Room.
MESSRS. CLAYTON & BLACK, Architects. (*See p.* 255.)

cal atmosphere enveloping him would task the genius of Mr. Conrad.

Now, exactly the same thing is very likely to happen in an American office. But the only drawing changed is the original. The prints are destroyed if the change is at all extensive, because it is cheaper to destroy them than to have the assistant waste his time in altering each copy.

I have heard English architects say English builders could not read blue-prints; they would not know what the different materials were unless they were coloured. I hardly think this is the case. They would soon become accustomed to them, and it is quite an easy matter for the architect to insert a list of materials in one corner of the sheet indicating just how each material is treated in section. If they were once given a fair trial I feel sure that in a few years the use of blue-prints would be almost as general in English offices as in those of America.

If space permitted it would be possible to bring up many other features of American practice which perhaps might not be without interest to English architects. The foregoing remarks have been but the record of ideas which might occur to the average architectural draughtsman from American offices trying his luck in England. As I remarked at first, my experience in this country has not been at all extensive, and I have no doubt that in many English offices one could find methods for carrying out certain parts of the draug ting-room routine which are superior to methods in use across the water. Certainly I have found in English offices an intelligence brought to bear upon the work quite equal to that found in American offices. I have found those English architects whom I have met to be men of sound culture, sincerity, and enthusiasm—in these qualities quite the equal of their brother professionals over there. Lately I have read in some of the current English periodicals articles written by English assistants who have been in America complaining about the way they are treated in England in comparison with the treatment (I am not speaking of the salary question) which they receive in the States. Perhaps my experience in this country has not been typical, but I must say that I, personally, have been treated at all times with the utmost consideration, fairness, and courtesy.

And I cannot help thinking what a fine thing it would be if more American draughtsmen were to come to England to learn something of the domestic architecture which English architects know so well how to produce, and if more English draughtsmen were to go to America to study the great buildings which are going up there every year. (Some of the students of the School of Architecture at Liverpool University did that very thing last summer.) Besides the professional benefit which would come to both—and here again I touch an irrelevant topic, but one mightily important to architects and to everybody—such a scheme, if carried out, would do its mite toward promoting a better understanding between two great nations which, whatever may be their faults, stand in this chaotic period, as they have always stood, for sanity and for law—things fundamental alike to art and to life.

EXHIBITION NOTES.

THE GROSVENOR GALLERY.

There is certainly quite a good proportion of work worth seeing amongst the hundred and sixty-seven exhibits at the Grosvenor Gallery, which mark its re-opening. There is no over-crowding and everything is adequately shown, whilst the interest is well sustained throughout the four galleries. Some of the best work our painters can show is to be seen in the large gallery. Sir John Lavery's group comprising "Lady Latham" (9), "In Morocco" (10), and "The Funeral of Kaid Maclean, Tangiers" (8), treats us to fine light and colour and telling portraiture. Sargent has a small but masterly interior—"A Venetian Tavern" (17), a wonderful expression of light in "The Grand Canal Venice" (19), and a full-length portrait of "Mrs. Leopold Hirsch" (26), which is rendered in pleasing tones of red. Two charming pictures are the "Battersea" and "Rochester" (2 and 4), by David Muirhead; the tones of warm grey are most pleasing. Between these the rich, bold colour of "The Sanctuary" (3, by D. Y. Cameron comes with great effect; this is in some respects one of the best things the artist has done, yet one cannot help feeling that, able as he is, he can go still further than in his wonderful expression of wide, calm spaces. Quite a colour triumph is the "Flora" (32), by John Wheatley, a recumbent portrait of a lady in purples and blues. A very able piece of painting is Glyn Philpot's "Portrait of a Child" (23), and the "Miss Lilian McCarthy as the Dumb Wife" (21), by Chas. Shannon, is an arresting canvas and of that admirable quality which forms a genuine decorative object. When, besides the above-named, we can include pictures by Philip Connard, Gerald Kelly, J. L. Forain, Sir Jas. Guthrie, W. Strang, Chas. Sims, Jas. McBey, and sculpture sketches by Derwent Wood, it is obvious the large gallery is worthily filled In the space at our disposal we must be content with noting Chas. Sims at his best in "Love and Pan" (36), the very true "Afternoon Sunshine" (36a), by Geo. Clausen; the well-designed panel of "The Infant Bacchus" (43), by Chas. Shannon, the fine, imaginative "Flight of Cleopatra" (51), by Chas. Ricketts, the excellent "Canal Bridge," by C. J. Holmes, and a charming portrait, "Fine Feathers" (66), by E. Barnard Lintott. "March" (57), by Oliver Hall, is one of the most perfect compositions we have ever seen; there is not a line or accent wrong, it only seems regrettable that this artist is so very grave in colour. The large "Spring" (63) by Laura Knight, we do not understand, for it is difficult to see how so accomplished a painter can give us so large a picture so full of littleness, when we remember so much of hers that is broad and strong. We cannot overlook work of especial quality in the pleasing "Violinist" (85), by Jas. McBey, and the clever effect in flat colour of the "Cader Idris" (87), by C. H. Collins Baker, which are to be found in the corner gallery, nor the masterly crayon sketch by Nelson Dawson of "A Wharfedale Lamb Fair" (102), in the small gallery, which contains a good deal of excellent work by several well-known artists.

Oppenheimer Diamond Factory, Brighton: Polishing Shop.
MESSRS. CLAYTON & BLACK, Architects. (*See p.* 255.)

LEGAL SECTION.

NOTES ON CURRENT CASES.

THE INCREASE OF RENT ACT.

Payment for Illegal Consideration.

A novel point under the Increase of Rent Act, 1920, was raised in the recent case, Mason, Herring and Brooks *v.* Harris and Another (*Weekly Notes*, Jan. 29). The action was brought on a cheque of which the defendant was the drawer; the cheque had been dishonoured, and the defence was that it had been given for an illegal consideration. The plaintiffs were the agents of a Mrs. Walters, who was the tenant of premises at St. John's Wood, which were originally let on a lease for seven years at a yearly rent of £70, and were within the Rent Acts. The residue of the term of this lease had been assigned to Mrs. Walters. The original lease was dated June 24, 1918.

By an indenture dated November 11, 1920, Mrs. Walters had assigned to one of the defendants the residue of the term held by her in consideration of a sum of £75, which formed part of the sum for which the cheque was drawn. The odd £5 and a sum for interest the defendants were ready to pay, but the defence as to the £75 was that the consideration was illegal, as under section 8 subs. (1) it is provided: "A person shall not as a condition of the grant renewal or continuance of a tenancy or sub-tenancy of any dwelling house to which this Act applies require the payment of any fine premium or other like sum or the giving of any pecuniary consideration in addition to the rent and where any such payment or consideration has been made or given in respect of any dwelling house under an agreement made after 25 March, 1920 the amount or value thereof shall be recoverable by the person by whom it was made or given." By subs. (2) penalties are imposed upon the person requiring a payment in contravention of this section.

The court held that the assignment was not a "grant, renewal, or continuance of a tenancy or sub-tenancy" within the above section, and judgment was given for the amount claimed.

Soldier Tenants.

In the recent case, Goodwin *v.* Rhodes (*Weekly Notes*, Jan. 29), section 5 subs. (1) (*g*) had to be considered. This subsection is as follows: That no order for possession shall be made unless "the dwelling house is required for occupation as a residence by a former tenant thereof who gave up occupation in consequence of his service in any of His Majesty's forces during the war," and the court thinks it reasonable to make such order.

In this case the plaintiff had been the tenant to the defendant of a cottage until he joined the Army in 1917. On his return from service the cottage was vacant, but he went to live with his wife. In the meantime the owner went into occupation herself. The tenant brought this action to get possession, and an order in his favour was made in the County Court, but the Divisional Court set aside this order. The court pointed out that the action would not lie, as the Act does not confer a new right of action and confer such a right upon a tenant: the whole scope of the Act was to restrict the right of a landlord to recover possession, and the meaning of paragraph (*g*) was not that a former tenant had the right to eject his landlord whenever he chose to bring an action but that a landlord should not have power to eject a tenant unless he could show that he required the premises for a former tenant who had given them up in order to join the Forces.

Alternative Accommodation.

In the recent case, Kimpson *v.* Markham (*The Times*, Jan. 27), the question was raised under section 5 subs. (1) (*d*), which provides that an order for possession shall not be made unless the court is satisfied that alternative accommodation reasonably equivalent as regards rent and suitability in all respects is available, at the time when that accommodation must be proved to exist The County Court judge had held the time indicated to be the time when notice to terminate the tenancy was given, but the Divisional Court over-ruled this decision and held that the judge must be satisfied that alternative accommodation was available at the time he was making the order or giving the judgment that would decree possession.

Consent Orders.

In Wellesly *v.* White (*Weekly Notes*, Jan. 29), it was held that section 5 subs. (3), which gives the court power to rescind an order made before the passing of the Act of 1920 but not executed, if in the opinion of the court the order would not have been made if the Act of 1920 had been in force, does not apply to orders made by consent, and, therefore, that a defendant who had consented to an order for possession because the case was not within the Rent Acts then in force could not avail himself of the subsection to have the matter re-opened.

Trade Disputes.

In our Legal Section for August 27, 1920, we discussed some very important cases on trade union law, as the law on this subject was very much affected by the decision of the Court of Appeal in White *v.* Riley and Wood, by which the judgment in the court below was reversed. In that note, however, we said we should have to revert to the subject when the judgment of the Court of Appeal was reported in full in the Law Reports. It is now reported (1921, 1 Ch. 1).

We do not intend here to set out the long statement of facts which will be found in our former note. It is sufficient to say the case turned upon the action of members of a trade union in giving the employers notice that if an employee who belonged to another union continued to be employed the men would cease work. In the court below the judge had held that the men had been guilty of an illegal conspiracy, and that they had knowingly and wrongfully induced the employers to commit a breach of contract with the plaintiff by dismissing him. The exact facts are set out in the judgment of the Master of the Rolls, but as they occupy some five pages in the Law Reports we can only refer to a summary of the facts made by us in our issues for June 25 and August 27, 1920. The Court of Appeal unanimously held that there was no evidence to support the above findings of the judge in the court below, and it is unnecessary for us to enter into this part of the case in detail, but one or two observations of the Lords Justices may be given as they are of general application. Thus, the Master of the Rolls said: "I think it is quite clear that the more statement to an employer by a number of workmen that they will not work with another workman, and that if the workman is retained in the service they will strike, is not of itself actionable," and for this statement of the law he relied upon Allen *v.* Flood (1898, A.C. 1). The Master of the Rolls said he could not find that anything more had been done in this case than what is stated to be permissible above, and he also said that the fact which in argument was relied on in this case as showing undue pressure, *i.e.*, the fact that the men knew that the employers would rather dismiss the man than upset the works, did not make their action illegal.

As regards the second point as to inducing a breach of contract, the Court of Appeal also found there was no evidence of this, and it may be remembered that there was in this case an agreement made by the union men with the employers that the men should pay to the employers any sum representing wages in lieu of notice which the employers might be called upon to pay to determine the plaintiff's contract in a legal manner. The employers had not claimed this sum, but the failure to complete this agreement was not brought about by the men.

These findings on the facts by the Court of Appeal rendered it unnecessary for the court to give a decision on the effect of the Trade Disputes Act, as no ground for action existed even at Common Law, but as the court below had decided the case under the Trade Disputes Act the court expressed its opinion on the effect of that Act; this is the really important part of the case, for it raised the question whether the case Valentine *v.* Hyde (*The Builder*, April 25, 1919) had been rightly decided.

The point arises in connection with the definition of "trade dispute" in section 5 subs. (3) of the Trade Disputes Act, for most of the sections depend upon acts having been done "in furtherance or contemplation of a trade dispute." Section 5 subs. (3) is as follows: "The expression 'trade dispute' means any dispute between employers and workmen or between workmen and workmen which is connected with the employment or non-employment or the terms of employment or with the conditions of labour of any person and the expression 'workmen' means all persons employed in trade or industry whether or not in the employment of the employer with whom a trade dispute arises."

Now, in Valentine *v.* Hyde it was held that a dispute between employees as to whether a man must join a union was not a trade dispute within the meaning of the above subsection, but in Hodges *v.* Webb (a case discussed very fully in our Legal Section for August 27, 1920), another judge of first instance had adopted a different view and expressed the opinion that in such circumstances there was a "trade dispute," so the Court of Appeal had in fact to decide which of the two decisions above mentioned was correctly decided, and it has now declared that the law is rightly laid down in Hodges *v.* Webb, and Valentine *v.* Hyde is thus practically over-ruled.

The Court of Appeal held that it is a question of fact in each case, whether there is a "dispute" within the meaning of the Act, that is a "dispute connected with the employment, etc." The dispute between the unions in this case was that the Curriers' Union to which the defendants belonged objected to the Workers' Union, of which the plaintiff was a member, including in their membership craftsmen such as the plaintiff, and to their negotiating with the employers on behalf of such men. The Curriers' Union insisted that all such craftsmen should belong to their union.

The Court of Appeal held that in these circumstances there was a dispute "between workmen and workmen" in connection with the employment of a person. The Master of the Rolls said it was difficult to draw the line between what was a trade dispute in this sense and what was not, and as it was a question of fact in each case he did not intend to attempt a general definition, but it may be observed that he distinguished this case from those of Conway *v.* Wade (1909, A.C. 506; *The Builder*, August 7, 1909) and Giblan *v.* National Amalgamated Labourers' Union (1903, 2 K.B. 600) on the ground that in these latter cases the workmen had refused to work with other workmen, not on account of matters connected with the regulation of employment, but on account of some personal conduct of the plaintiffs as members of their union. In Conway *v.* Wade the cause of complaint, for instance, was that the man objected to had while a member of another branch many years previously neglected to pay a fine imposed upon him by the union.

One other point may be noticed in connection

with these cases. In Hodges *v.* Webb the judge who tried that case had distinguished it from Valentine *v.* Hyde because on the facts of that case (*The Builder*, August 27, 1920) the employers were also involved in the dispute. In White *v.* Riley it was unnecessary to decide this point, but the Master of the Rolls, after saying it had become unnecessary to say whether there was a dispute between employers and workmen, because it had been decided that a dispute between workmen and workmen was within the Act, continued: "I do not say there was not a dispute between employers and workmen, and I do not say that this action of the men in the shop could not be considered to be taken in furtherance or contemplation of a dispute between employers and workmen, because it may very well be that when they had once intimated to the employers that the plaintiff ought to join their union and they knew that the employers wished to retain him in their service the action which they took with regard to the employers after that may have been in contemplation of a dispute between the employers and the workmen." The Master of the Rolls, however, guarded himself by saying he did not expressly decide this point.

It will be seen that the decision has done much to clear up some points which have occasioned much litigation, and therefore we have touched upon it at some length.

"Knock Out" at Auctions.

In our issue for July 2, 1920, we referred to the case Rawlings *v.* General Trading Co., which raised a question as to agreements made between buyers at sales by auction. The plaintiff was suing to enforce an agreement made between himself and the defendants at a sale by auction of Government property. The plaintiff and the defendants, finding they were going to bid for the same articles, had come to an agreement that the defendants should bid on their joint account and that whatever was purchased should be divided between them. Subsequently the defendants had repudiated the agreement, and the plaintiff in this action was seeking to enforce it.

The court below had held that, at any rate in a case like this where the goods were the property of the Government, it was contrary to public policy that the goods should be sold at less than a fair price, and therefore the contract was unenforceable.

The Court of Appeal (*Weekly Notes*, Jan. 15) has now set this judgment aside and entered judgment for the plaintiff. It must be noted that this was a case where two buyers were the parties to the action, but from the judgments delivered by the majority of the court it would appear that there is nothing illegal in such arrangements and that (as in this case), in the absence of any combination to make misrepresentations, express or implied, with intent to deceive the seller, there would be no cause of action by the vendor. Lord Justice Scrutton dissented from the majority of the court, holding that the contract was unenforceable as being in restraint of trade against the interests of the public. Lord Justice Atkin in his judgment pointed out that the point as to restraint of trade had neither been pleaded nor raised at the trial.

As far as the vendor is concerned the decision, it will be seen, has no application directly to his position, but, as the value of sales by auction as a means of obtaining a fair market price is often prejudiced by arrangements between buyers, we have often urged that it would be of public advantage if the legislature could place some check upon this system, but the remedy is not easy to devise.

A Leicester-square Site for Sale.

The Empire Theatre and the Queen's Hotel, Leicester-square, together with the adjoining vacant site comprising about 3,000 ft., is to be sold by auction by Messrs. Knight, Frank, and Rutley at Hanover-square in March. The block covers an area of about 33,300 ft.

THE REBUILDING OF DEVASTATED FRANCE.—II.

By H. P. CART DE LAFONTAINE, Member of the Commission Technique de la Renaissance des Cités

The "Loi Cornudet" of March, 1919.

BEFORE proceeding further in our investigation of the typical examples of reconstruction it is necessary to devote a little time to the consideration of the French Town Planning Law of March 14, 1919, and later to touch on the more important clauses of the Law of April 17, 1919, with regard to compensation for war damage. It is remarkable that (even in the districts most affected) many of the provisions of both these important Acts are not clearly understood or fully made use of. On the other hand, it is equally true that certain clauses have been rendered almost **in the letter inoperative** owing entirely to the persistent energy displayed by the rural population in the reclamation and re-cultivation o land which had been definitely pronounced as "sterile" by competent Government officials.

The Act of March 14, 1919*, is, in effect, the first law applying the modern art and science of town planning to France, and lays down, as a definite principle, that "every town of 10,000 or more inhabitants is forthwith to prepare a scheme for the laying out, improvement, and extension of such town without prejudice to the building and levelling regulations imposed by the law of 1884."

The Act applies to:—

(1) *Communes* in the Department of the Seine, by reason of their proximity to one another **and** to the capital.

(2) Smaller towns than those with 10,000 inhabitants, where these show—by recent statistics—a rapidly increasing population. *Communes* of less than 10,000 and over 5,000 inhabitants when their population has increased by more than 10 per cent. in the period which has elapsed between two consecutive quinquennial censuses.

(3) Health resorts, bathing stations, etc., where the resident population is increased by more than 50 per cent. of tourists or non-residents at certain seasons of the year.

(4) Groups of houses, irrespective of size or number, which have some special feature of picturesque, artistic, or historical importance, and which have been officially "classed" as such by the State.

(5) Groups of dwellings and building plots, developed or created by associations, societies, or private individuals.

It will be seen that in practice the Act applies to a very considerable proportion of the *communes* of France, more especially when it is remembered that the provisions of the Act also apply to all towns and villages of the devastated regions, of which 75 per cent. of the actual habitations have been destroyed. The length of time allowed for the preparation of the town-planning scheme under the Act was three years from the date on which it became law, for towns, etc., in the non-devastated areas and three months for the liberated regions. The latter period has, naturally, had to be extended in nearly every case.

The procedure for the carrying into effect of the Act is, briefly, as follows:—

In the case of a single *commune*, the Municipal Council appoints "a man of art (he is sometimes the *chef de la Voirie*, which post approximately corresponds to our 'Borough Engineer') or society" to prepare a scheme on their behalf. This ***projet*** (at the expiration of two months, or such extension of time as has been allowed) is examined by the Prefect, who instructs the Council to proceed with a definite scheme. If this body takes no action during the ensuing month the Prefect makes the necessary appointment.

The definite scheme is then considered and approved by the Mayor and Municipal Council, and the plans are open for public inspection for a period—usually 14 days—during which persons affected may lodge objections.

An inquiry is then held, when the cases requiring expropriation, &c., are examined and the scheme (with the recommendations and remarks of the Council) is passed to the Commission of the Department. This is presided over by the Prefect, and is composed of the Public Health Council, the Commission for the preservation of sites and natural features, the Committee of Civil Buildings, and the Mayors who are on the General Council of the Department. The function of this "County Commission on the planning and extension of towns and villages" is to act as arbitrator, after hearing delegates from the interested parties; it also has the duty of collecting necessary documents and pronouncing on the merits of the schemes.

It is, unfortunately, here that delays occur, due principally to the enormous number of schemes to be considered or the complexity of the problems involved. In the Department of the Nord, Pas de Calais, Somme, Aisne, &c., the Prefect is assisted by the Chief of the Ministry of the Liberated Regions for the Department in the consideration of the technical questions involved in the various schemes and their possible realisation.

The scheme then goes, with the Prefect's blessing, to the "Higher Commission on the planning, improvement and extension of towns," presided over by the Minister of the Interior, assisted by the Minister of the Liberated Regions as Vice-President, and a large committee composed of *Senateurs*, *Deputés*, *Conseilleurs Généraux*, *Maires* (chosen by their respective *communes*), and various Government officials, such as the Director of the Administration of Departments and Communes, Public Health and Poor Law Relief, and members of the National Public Health Council, the *Conseil Supérieur des Beaux Arts*, the ***Conseil Général des Batiments Civils***, and a certain number of architects and "town planners," nominated by the Minister of the Interior.

If the scheme is approved by this "Higher Commission," it is declared to be of "public utility" by the Council of State, and the necessary grants can then be made to enable the work to be started. In cases of urgency the Prefect (on the recommendation of the Commission for the Department) may take this step. If, at the end of the period allowed, no scheme has been adopted by the Municipal Council in any *commune* affected, the Prefect takes the necessary action to comply with the provisions of the Act at the expense of the ***commune***, which also loses its right to a "grant in aid" from the State.

The scheme may, of course, concern several adjacent ***communes*** in one Department—this is most particularly the case in the industrial regions in the *Département du Nord*, and we shall have a typical example of the practical application of the Act in such cases when, in a later article, we consider the new "regional" town-planning scheme for Lille, Tourcoing, and Roubaix; for the moment it will suffice to note that the Prefect has the power to order a regional survey to be made, including the whole area affected, and may arrange inter-communal conferences and authorise associated communal committees for the preparation of a joint scheme. Associations, societies, or private individuals who prepare schemes have to consult the municipal authorities with regard to roads, waterways, sewers, water supply, &c. The scheme is approved, if necessary, by a Prefectoral decree, and the Mayor of the ***commune*** grants permission to build.

It is also important to note that after the passing of this Act private owners of land adjoining proposed new roads, &c., may not erect buildings unless they have the consent of the Mayor, and must conform to the new building line.

* For much of the information with regard to the Act of March 14, 1919, I am indebted to Monsieur Henri Sellier, Mayor of Suresnes, Conseilleur Général du Dept. de la Seine.

THE TOWN-PLANNING INSTITUTE.

Agricultural Belts of Garden Cities.

MR. R. STILGOE (President) occupied the chair at a general meeting of the Town-Planning Institute held at the Surveyors' Institution on February 4, when Sir HERBERT TRUSTRAM EVE, K.B.E., F.S.I., read a paper on "The Agricultural Belts of Garden Cities."

The theory of an agricultural belt, he said, was that it should be occupied, as time went on, more and more intensively so as to provide food for the new town in a fresh and palatable state. It would be as well to discuss what actually happened when a garden city company entered into contracts with various owners for the purchase of an area. In the first place, all the land to be purchased was occupied by somebody, either under leases or yearly agreements, and, incidentally, someone had the right to shoot over the land either under a lease or yearly agreement. A date was arranged under those contracts for completion of the purchase and for possession, and it was not likely that any of the area would be in possession of the vendor, and therefore the whole area was bought subject to existing tenancies. Not a single peg could be driven in the land, nor could any levels be taken or trial holes dug apart from the good will of the occupiers, and immediately there arose the very difficult question of negotiations with the tenants. In some cases it might be possible to enter into fresh agreements with the tenants, but in other cases notice to quit would have to be given, which for agricultural land must not be less than twelve months for yearly tenancies. The company was in a difficult position because on the one hand it was necessary that the land should be continued to be cultivated and on the other hand the company must be in a position to take possession of parts of holdings for the purpose of letting into smaller holdings, and in the case of the town area actual possession for sidings and for selling or leasing in plots. As far as the agricultural belt was concerned, the tenants were very annoyed with the garden city coming anywhere near them, and immediately they began to farm in a half-hearted way, thinking they might be turned out in time. There was a long period, therefore, between the completion of the purchase and the proper development of the agricultural belt in smaller holdings. Previous to the passing of the Agricultural Act, it was necessary to pay fairly heavy compensation to tenants for giving up land, but under that Act the compensation was now very much heavier and might be prohibitive.

The development of an agricultural belt depended largely on the amount of road frontage, on the nature of the soil—whether it was grass or arable—on the houses and homesteads which existed, and a hundred other matters, and every agricultural belt naturally must be dealt with on the particular merits of the case. He supposed it would be agreed that the development towards intensiveness of the agricultural belt varied in direct proportion with the growth of the town. What was the real object of a garden city company in having an agricultural belt? It might be said that it was largely a question of fresh air, largely a question of sentiment, or largely a question of eventual food production for the inhabitants; but he suggested that an honest answer was that the promoters were determined that no owner of neighbouring land should reap the advantage from the enhanced value owing to the development of a new town, and that was why garden city companies bought large areas and did not confine themselves to the actual area required for the town.

Perhaps the most important point in connection with agricultural belts was the question of capital cost, for if the developed area required some 800 or 1,000 acres, the agricultural belt should contain at least 2,000 acres. Subject to outgoings, such as tithe and land tax, that 2,000 acres of agricultural belt would stand in the company's books at, say, £80,000, and that capital cost would remain, because the whole idea was that the agricultural belt should never be sold or leased for building. In these days a sinking fund saved out of income seemed impossible. To pay 7 per cent. or 8 per cent. on £80,000 required a very large annual payment, and it was quite certain that the net rents from the 2,000 acres would show a very much less figure per annum than was required for the interest on the capital cost, and the belt was a constant drain on the resources of the company; although, of course, as it was more intensively occupied the rents would tend to rise, and rise progressively. In these days of dear money, therefore, it must be recognised that an agricultural belt was a luxury. The total capital required for the purchase of all the area for a garden city, together with the capital required for road making and development, etc., was a huge sum, and even £80,000 might make a difference between success and failure. It seemed a great pity that the promise of the Government, under which 75 per cent. of the land value would be advanced to garden city companies, was not carried out, and he failed to see why local authorities should have the right to borrow from the State and that that should be denied the garden city companies.

He was all in favour of agricultural belts, but his point was, could they afford them in these days? The development of Port Sunlight was, of course, very able, and the allotments, gardens, playing grounds, football grounds, etc., together with tennis lawns, bowling greens, etc., were admirably planned, and there was no agricultural belt there. The same remarks applied to Bournville. Some might argue for the placing of these necessaries in the developed area, but one always had to consider that open spaces and wide roads meant waste of time in getting from place to place for the inhabitants for ever That was a most important question. Letchworth Garden City had an agricultural belt. In that case the tenants readily fell in with the wishes of the company, but no one could say that the agricultural belt had had a marked influence on the town, and yet he thought the management of it had been as good as circumstances would allow. A very important point in connection with agricultural belts was the nature of the soil, and whether it was suitable for intensive market gardening or not, or whether it required some years of really good farming and manuring before it became suitable for gardening. The best market gardening land was on river gravel, which implied a flat area; while for a garden city great variation in the level of the surface was required, so as to make it attractive, although the actual area of the town should be fairly level, to save expense in development.

The ideal would be for the company to take in hand the farming of the whole of the agricultural belt as soon as the tenants could be got rid of, and farm the land itself, gradually giving up pieces to intensive smallholders; but that, again, meant a large additional capital for farming, and, after all, farming was not the business of a garden city company, and large losses might result. At Welwyn Garden City the position was ideal—the land was good and there was an agricultural belt which at present was being farmed by farmers, and it was very good land for farming, but not ideal for intensive vegetables until the land had been made. Should there be a trust deed under which land set out for an agricultural belt could never be built on? He was inclined to say "No," for it was a good rule never to put restrictions on land which would bind future generations, because they were only human and entirely unable to prophesy even a few years ahead; and from a fresh-air point of view he could not see why buildings should not be promoted on an agricultural belt so long as the buildings were connected with agricultural or intensive occupation. The presence of human beings, or the immediate likelihood of their coming, gave a floating building value. Directly the garden city company purchased a good area and the railway company erected a temporary station on the estate, and as the town developed, the value of almost every acre of the whole property was enhanced, and enhanced in direct proportion with the development of the town, and in course of time there was a floating building value on a large portion of the agricultural belt, which it was tempting to realise. Was it wrong to do this? He thought perhaps the fresh-air idea was rather overdone, because in the development of the town itself there was air enough and to spare, and it could not make any difference to the lungs of the inhabitants of the town whether there were a few buildings on the agricultural belt or not.

It appeared that under present circumstances a large agricultural belt was impossible, although it was an ideal to be aimed at, and so long as there were small productive areas just outside the town area, he thought that was all they could afford at the present time. After all, shareholders wanted some return on their money, and he was afraid they must admit that an agricultural belt was a standing debit against the shareholders' pockets for many years after the first purchase of the land.

SIR LAWRENCE WEAVER (Director-General of Land Settlement, Ministry of Agriculture) proposed a vote of thanks to the speaker, and pointed out that an agricultural belt could hardly be said to be for the benefit of the shareholders of the garden city company. Therefore, it must be for the benefit of the citizen, and they must pay for it or go without it. He did not imagine that a garden city company would make a success of farming. It did not seem to him that they could develop small holdings on an economic basis with the present price of building. It was not being done either by the County Councils or the Government at the present, and so soon as those to whom the Government had given a pledge were provided with small holdings there would be no further small holdings created either by private owners or anybody else.

CAPTAIN REISS, in seconding the motion, said the object of those who advocated garden cities was not merely to get a residential estate or to benefit the urban population, but to benefit both the urban and rural populations.

SIR THEODORE CHAMBERS said if land was bought at a certain price it was either worth that price or not—it would not decrease in value because a garden city company bought it. He believed if anyone put down the money for building garden cities rapidly in various parts of the country, provided care was taken in choosing the sites, and transport and so on were good, even under the present economic conditions such values would be built up as would make the financial aspect satisfactory

MR. PURDOM said it was only in the nineteenth century that there was the fatal divorce between agricultural and urban life. An agricultural belt was not merely the land bought by a garden city company but was the area of land which was within the influence of the town. So far town planning had been merely the preparation of schemes for building development, but the time was rapidly coming when the influence of agricultural land on towns must be taken into account by town planners.

MR. BURR urged that security of tenure must be given to existing tenants on agricultural belts.

MR. BARRY PARKER asked how, when a small holding was created, they were to prevent the holder adding a barn to the homestead or building a cottage for a servant. The only way was to make a trust deed and define the area on the holding on which buildings might be erected.

MR. WARWICK DRAPER said if it were stated that agricultural belts were not feasible propositions in the future it would destroy the essence of the garden city movement as contrasted with garden suburb development. He suggested that the promoters of the Welwyn scheme should try to get the assistance of people versed in agricultural matters. Land in the agricultural belt could be let for sports grounds, which commanded a high rental. He suggested that garden city societies should have powers of compulsory purchase of land.

HOUSING AND TOWN-PLANNING NOTES.

The Cost of House Building.

The Bourne Urban District Council has resolved, for financial reasons, to suspend building any more cottages under the new housing scheme for a period of six months.

The Housing Commissioner for the area has refused to sanction the Clown and Barlborough housing schemes, on the ground that the cost is excessive.

The Torquay Town Council has deferred its scheme for the erection of fifty houses until May, as it is expected the cost of building will be reduced by then.

The Luton Rural District Council has decided to postpone for at least six months its scheme for the erection of twenty-four houses at Limbury.

The Hanley Rural District Council has reduced its housing scheme from 144 houses to 112.

Colchester Housing Scheme.

The first of the new houses of the Colchester housing scheme were officially opened on February 17, at Defoe-crescent, Myland, where eighteen houses have been erected at a cost of about £1,200 each. They are built with rough-cast brick walls and red-tiled roofs. They are to be let at a rent of 10s. 6d. per week with rates, approximately amounting to 6s. 3d., in addition. Seventy-eight houses are being built under the scheme in various parts of the town, and the economic rent of each of these houses if fully charged would be 36s. 9d. a week. The Council is having a site prepared for the building of a number of other houses by direct labour and hopes to erect these houses more economically. The joint architects for the scheme in Colchester are Messrs. Duncan Clark and Walter Cressall.

WEEKLY HOUSING RETURN.

Progress of housing schemes up to February 11:—Schemes submitted, 11,565; approved, 8,991. Lay-out schemes submitted, 7,272: approved, 6,700. House-plans submitted, 295,611 houses; approved, 277,219. Tenders submitted, 189,765 houses; approved, 176,082. Contracts have been signed for 147,460 houses.

Schemes dealt with during the week ended February 11: Schemes submitted, 33. Lay-out schemes submitted, 58; approved, 46. House-plans submitted, 2,108 houses; approved, 1,022. Tenders were submitted for 1,667 houses, and approved for 2,081. These schemes include the following:—

Applications.

SITES.

RURAL.—Great Ouseburn, 10.11 acres.

LAY-OUTS.

URBAN.—Barking, Bewdley, Coleford, Coventry, Flockton, Haslingden. Leicester, Letchworth, Mottram-in-Londendale, Stoke-on-Trent, Welshpool.

RURAL.—Amesbury, Atcham, Blaby, Bodmin, Carmarthen, Chippenham, Clown, Droxford, E. Kerrier, Epping, Hitchin, Martley, Mutford and Lothingland, Preston, Romford, Staines, Tewkesbury, Thornbury, Tiverton, Upton-on-Severn, Uxbridge. Wellington.

HOUSE-PLANS.

URBAN.—Barking, 98 houses; Bewdley, 50; Brighton, 443; Carshalton, 2; Caterham, 46; Chepping Wycombe, 14; Coleford, 92; Coventry, 181; Darwen, 16; Eton, 40; Flockton, 12; Gosforth, 22; Hetton, 418; Keighley, 26; Leicester, 4; Letchworth, 6; Mottram-in-Longdendale, 6; Shoreditch, 20; Stoke-on-Trent, 10; Wallasey, 157.

RURAL.—Amesbury, 24 houses; Atcham, 4; Auckland, 36; Caistor, 12; Cannock, 36; Droxford, 24; Epping, 14; Gt. Ouseburn, 16; Hitchin, 6; Long Crendon, 4; Martley, 4; Mutford and Lothingland, 8; Northampton, 8; Sevenoaks, 18; Shepton Mallet, 6; Thornbury, 20; Upton-on-Severn, 14; Wigton, 12; Winchester, 56; Wokingham, 14; Yeovil, 6.

Approvals.

SITES.

URBAN.—Maidstone, 17 acres; Nuneaton, 13.78.

LAY-OUTS.

URBAN.—Bewdley, Brighton, Chingford, Coventry, Darwen, Flockton, Haslingden, Leicester, Letchworth, Mottram-in-Longdendale, Seaton Delaval, Stoke-on-Trent.

RURAL.—Atcham, Chippenham, Cuckfield, E. Kerrier, Faringdon, Hitchin, Hoo, Martley, Mutford and Lothingland, Northampton, Romford, S. Shields, Tewkesbury, Thornbury, Ulverston, Upton-on-Severn, Wellington.

HOUSE-PLANS.

URBAN.—Bewdley, 50 houses; Callington, 5; Carshalton, 2; Chepping Wycombe, 52; Chingford, 30; Coventry, 181; Cuckfield, 28; Eton, 40; Flockton, 12; Keighley, 26; Leatherhead, 8; Leicester, 4; Letchworth, 6; Mottram-in-Longdendale, 12; Shoreditch, 20; Stoke-on-Trent, 10.

RURAL.—Atcham, 4 houses; Bridport, 16; Caistor, 12; Cannock, 36; Hitchin, 6; Hoo, 12; Martley, 4; Mutford and Lothingland, 9; Norham and Islandshires, 16; Northampton, 8; Romford, 10; Thornbury, 20; Ulverston, 4; Upton-on-Severn, 14.

Tenders Approved.

URBAN.—Bath, 24 houses; Biddulph, 86; Cannock, 50; Carlton, 8; Carshalton, 2; Coventry, 181; Darlaston, 30; Eastleigh and Bishopstoke, 30; Harrogate, 110: Kenilworth, 26; Leeds, 206; Leicester, 4; Letchworth, 162; Longbenton, 78; Lowestoft, 27; Newcastle-on-Tyne, 90; Prestwich, 50; Royston, 30; Shildon, 82; Shoreditch, 20; Stoke-on-Trent, 10; Stow-on-the-Wold, 25; Swindon, 200; Weston-super-Mare, 6.

RURAL.—Amersham, 8 houses; Axbridge, 4; Aylesbury, 10; Bideford, 6; Buckingham, 4; Caistor, 12; Chipping Sodbury, 16; Cookham, 26; Easington, 14; Easthampstead, 16; E. Kerrier, 10; Faringdon, 38; Foleshill, 14; Hoo, 112; Houghton-le-Spring, 100; Kettering, 114; Newbury, 10; Stow-on-the-Wold, 6; Thornbury, 3; Ulverston, 2.

COUNTY COUNCIL.—Yorkshire (E. Riding), 5 houses.

Cheaper School Buildings.

Sir Arthur Shipley will open on Saturday a considerable extension of Gresham's School, Holt, Norfolk, of which the Fishmongers' Company are Trustees under the Gresham Trust. The new buildings include biological and geographical laboratories, manual training shops, art room and two class rooms. Holt is one of the latest of our public schools, built in 1903. The new buildings at Holt have been devised by Mr. J. W. Simpson, P.R.I.B.A., and his partner, Mr. Maxwell Ayrton, F.R.I.B.A. They are of elm framing made up in sections and bolted together, covered on the outside by elm weather boarding and lined internally with "Peaver" board about a quarter-inch thick. The board is carried up on the underside of the rafters, and the joints are covered by elm fillets. The site is covered with a six-inch concrete floor, carried down around the outside walls as a nine-inch concrete wall reinforced with oak piles. The floor covering is three-quarter-inch deal wood block, and the windows, doors, and fittings, except the teak bench tops, are all treated with green Solignum. The roof principals are of light elm board, and are covered with Norfolk reed thatch twelve inches thick. The exact alignment of the hips and eaves and the cutting of the ornamental ridges all carried out by eye only are a direct reminder of the value of tradition in work. It will last for forty or fifty years without repair. The total cost including furniture is £7,000, or £1 8s. per superficial foot, as compared with £5 using normal materials.

SMOKE ABATEMENT.

AT a conference organised by the Higher Production Council, and held at Olympia last week to discuss the subject of "Civic Efficiency," Lord Newton (Chairman of the Inter-Departmental Committee on Smoke Pollution) said everyone was agreed that this country was, without question, the smokiest and dirtiest in Europe. A great deal of improvement was required, and that could be effected without damage or injury to a great extent. No one was prepared to go to such a length as would permanently cripple or injure important industries. It was comparatively easy to legislate on the question of industrial smoke, but he doubted whether they would find a Government that would have the courage to tackle the question of domestic smoke. As a matter of fact, it was feasible. An enormous number of houses were now being constructed, largely out of public funds, and it seemed only reasonable that the taxpayer, who had to pay, should have some voice in their construction and in the question of how atmospheric pollution should be dealt with. The Smoke Pollution Committee, in an interim report, had made recommendations which were approved by all who took an interest in the question, but not the smallest notice had been taken of them, and in the houses in process of erection no steps were being taken to deal with the emission of smoke. The Committee had visited some of the industrial districts, and the great municipalities were in most cases prepared to deal with the evil as best they could. London might be cited as a favourable example. The discouraging fact was that, however much municipal authorities might bestir themselves, they were really at the mercy of their neighbours. What was required was greater uniformity in legislation.

DR. H. A. DES VŒUX (Hon. Treasurer, Smoke Abatement Society) said the yearly damage to London by smoke was about £5,000,000. If a clean atmosphere were demanded, it could be obtained. The problem had been successfully tackled by New York, and Pittsburg had cleared its atmosphere of all smoky impurities. The greatest offenders of the domestic chimneys were those from the kitchen fires. These fires could with efficiency and economy be done away with. The destruction of ancient buildings was painful to behold. In the interests of efficiency, economy, health and cleanliness, and in the interests of the noble buildings which could never be replaced, he appealed to all to help the Society in its crusade.

DR. J. S. OWENS said the two chief considerations the Advisory Committee on Atmospheric Pollution, of which he was the Hon. Secretary, had been (*a*) deposit from the air, and (*b*) suspended impurities. The mean monthly deposit for fourteen different stations for the year ended March 31, 1920, ranged from 39.30 tons per square mile at Southwark Park, London; 35.40 tons at St. Helens; and 31.10 tons at Richmond Park, Glasgow; to 21.58 tons at the Meteorological Office, South Kensington; and 7.02 tons at Malvern. The average deposit over London for the year amounted to about 40,000 tons. This was better than it had been, as in 1916 it came to about 55,000 tons, since when it had steadily diminished. Systematic measurements of suspended impurity showed certain features common to all, viz., a pure air between midnight and 6 a.m., a rapid increase of impurity from 6 a.m. to about 10 a.m., and a rapid fall in the impurity between 10 p.m. and 12 p.m. It was noteworthy that this rapid fall did not correspond with the hour of closing factories, say, about 6 p.m., but with that of letting out domestic fires. If weekdays were compared with Saturdays and Sundays, there was little difference in the amount of impurity, although factories were closed most of Saturday and all day on Sunday. These facts pointed towards the domestic fire as the chief source of atmospheric impurities. He had calculated that the domestic fires of London between 6 a.m. and 9 a.m. produced over 200 tons of soot.

THE BUILDING TRADE.

SCIENCE APPLIED TO BUILDING PROBLEMS.—V.

LIMES AND CEMENTS.

THE following is an abstract of one of a series of lectures being delivered at the Northern Polytechnic Institute, on "Science Applied to Building Problems." This lecture, by Mr. R. R. Butler, B.Sc., A.I.C., F.C.S., dealt with limes and cements used in mortars.

As a preliminary classification, he said, the various materials might be grouped in the following way:—

CEMENTING MATERIALS.

(1) Carbonate .. (*e.g.*, lime mortar).
(2) Silicate .. (*e.g.*, hydraulic lime and Portland cement).
(3) Hydrate .. (*e.g.*, plaster of Paris).
(4) Complex .. (*e.g.*, Sorel cement).

Such a classification could only be approximate, since the re-actions which occurred in the processes of setting and hardening would be too complex to admit of such exact limitations. Materials of the first group, such as ordinary lime mortar, owed their properties to the absorption of carbon dioxide from the atmosphere, resulting in the re-formation of the original material.

The removal of carbon dioxide from limestone, with the resulting formation of quicklime, was represented chemically by the equation—

$$CaCO_3 \longrightarrow CaO + CO_2.$$

The burning of the limestone was carried out in kilns of two types, known respectively as the "continuous" and the "periodic" types. In the "continuous" kilns, the limestone was either subjected to the action of the hot gases from a furnace, resulting in the production of a very pure quicklime (long-flame kilns); or alternate layers of limestone and coal were fed into the kiln, where they were made to burn—the result being quicklime mixed with the ash from the coal (short-flame kilns). The "periodic" kiln, largely used in this country, consisted merely of a loosely packed mass of limestone heated from below by a furnace, the heated gases from which passed up through the mass. When such a charge of limestone had been converted into quicklime, the kiln must be cooled and the calcium oxide removed before the next charge could be introduced.

The conversion of limestone into quicklime commenced at about 900°C., and it was found in practice that the temperature should not exceed 1,200°C.

A "fat" lime contained a very high percentage of calcium oxide, usually above 85 per cent., and a typical analysis of Buxton lime showed

CaO	98.7	per cent.
Total SiO_2	0.71	,,
$Al_2O_3 + Fe_2O_3$	0.11	,,
Magnesia	0.46	,,

A "lean" or "poor" lime contained a much greater percentage of silica, iron, and other impurities, as was shown by an analysis of such a lime:—

CaO	71.1	per cent.
Total SiO_2	23.54	,,
$Al_2O_3 + Fe_2O_3$	1.64	,,
Magnesia	1.04	,,

A magnesian lime, prepared by calcining a magnesian limestone, contained a high percentage of magnesia in comparison with either a "fat" or a "lean" lime, analysis figures for a typical magnesian lime being—

CaO	46.72	per cent.
Total SiO_2	2.94	,,
$Al_2O_3 + Fe_2O_3$	1.90	,,
Magnesia	32.60	,,

In practice, a lime containing up to 10 per cent. magnesia would be sold as a pure lime, but above that figure the lime was sufficiently different in its properties to be classed as a magnesian lime.

When water was added to quicklime the phenomenon of slaking occurred, with the production of considerable heat and an increase in volume. Sand was then mixed with the slaked product, to prevent excessive shrinkage when drying, and the resulting dry mass was in a porous condition, capable of rapidly absorbing the carbon dioxide of the atmosphere, with the production of calcium carbonate. Expressed chemically the re-actions were:—

$$\underset{\text{(quicklime)}}{CaO} + \underset{\text{(water)}}{H_2O} \longrightarrow \underset{\text{(slaked lime).}}{Ca(OH)_2}.$$

$$\underset{\text{(slaked lime)}}{Ca(OH)_2} + \underset{\text{(carbon dioxide)}}{CO_2} \longrightarrow \underset{\text{(calcium carbonate)}}{CaCO_3} + \underset{\text{(water)}}{H_2O}$$

The differences between a fat lime and a magnesian lime were shown in the following tables:—

Fat lime:—
(*a*) Slaked quickly.
(*b*) Evolved much heat on slaking.
(*c*) Expanded considerably in slaking.
(*d*) Set slowly.

Magnesian lime:—
(*a*) Slaked slowly.
(*b*) Evolved little heat on slaking.
(*c*) Expanded little in slaking.
(*d*) Set more rapidly.

Two possible objections to the use of magnesian limes were—first, the mortar mixer might misjudge the time required for proper slaking of the lime, which was longer than that required for slaking a fat lime; and, second, the bulk of the slaked product was distinctly less than that produced from the corresponding quantity of a fat lime, and, therefore, the average builder might possibly think the use of such a lime too expensive.

On the other hand, tests over long periods with properly slaked magnesian lime had shown it to be superior to fat lime as a cementing material.* The following limestones were converted into limes:

(1) High calcium limestone, yielding on analysis:—

SiO_2	—	per cent.
$Al_2O_3 + Fe_2O_3$	—	,,
$CaCO_3$	86.22	,,
$MgCO_3$	9.27	,,

(2) Magnesian limestone, yielding on analysis:

SiO_2	0.45	per cent.
$Al_2O_3 + Fe_2O_3$	0.28	,,
$CaCO_3$	54.20	,,
$MgCO_3$	45.06	,,

The limes from these limestones were made into mortar containing lime (1 part) and sand (2 parts) by weight, moulded into briquettes and the tensile strength examined at intervals. The following results were obtained:—

	Tensile Strengths in lbs. per sq.in.			
Age	High calcium lime.		Magnesian lime.	
4 weeks	30.6	....	—	
8 weeks	36.4	....	28.8	
3 months	39.2	....	37.2	
4 months	39	....	51	
6 months	50.8	....	83	
1 year	44.6	....	92.8	

In other words, the magnesian lime set and hardened in such a way that its tensile strength at the end of one year was double that of the fat lime mortar.

Fat limes were rarely employed to-day as mortar, owing to their inability to set under water, or in the presence of much moisture. The absorption of carbon dioxide by quicklime was shown by the lecturer, and the fact that mortar would not set under water was also demonstrated. Very thick walls had been known to show the presence of quicklime in the interior of the wall after twenty-five years' exposure, indicating the slowness with which the carbon dioxide of the atmosphere penetrated a thick mass of mortar.

In view of this, most mortars to-day were of the nature of hydraulic cements, and came under the category of silicate cementing materials.

The materials from which hydraulic limes were made contained, in addition to the calcium compounds, from 15 to 30 per cent. of clayey matter, which could be looked upon for this purpose as aluminium silicate. The preparation of a hydraulic lime from the naturally occurring mixture was carried out by kilning in the same manner as in the production of quicklime, except that the temperature was not allowed to rise as high in the latter case as in the former.

Hydraulic limes included all those cementing materials made by burning siliceous or argillaceous limestones, clinker of which after calcination contained so large a percentage of lime silicate as to give hydraulic properties to the product, but which at the same time contained normally so much free lime (CaO) that the mass of clinker would slake on the addition of water.

In other words, two conditions were necessary:—

(*a*) The clinker must contain enough lime to slake on the addition of water (and thereby pulverise itself, avoiding in that way the expensive grinding which was necessary in the case of Portland cement); and

(*b*) The resulting powder must be capable of setting or hardening under water.

After burning, a hydraulic lime was, therefore, a mixture of lime silicate ($3\,CaO\,SiO_2$), which would not slake on addition of water, but which would form a hydraulic cement if finely ground, and quicklime, which would slake on adding water.

The slaking of the clinker was usually done before the material left the cement maker's premises. The free CaO was slaked and the expansion due to the formation of $Ca(OH)_2$ broke up the mass, producing a fine, dry, white powder, consisting of about three parts of lime silicate and one part of slaked lime, to which it was only necessary to add water to produce hydraulic cement.

If the limestone originally contained only 8 to 14 per cent. clayey matter, the hydraulic properties of the lime were poor. If the percentage of clayey matter in the material exceeded 20 per cent., it was termed "eminently hydraulic." The respective properties of the two grades were:—

Eminently hydraulic lime (exceeding 20 per cent. clay):—
(1) Slaked slowly.
(2) Little heat evolved.
(3) Increase in volume small.
(4) Set after a few days.
(5) Slowly hardened to a stony consistency.

Weak hydraulic lime (8 to 14 per cent. clay):—
(1) Slaked more readily.
(2) Greater heat evolved.
(3) Larger increase in volume.
(4) Set in from two to three weeks.
(5) Never became stone hard.

A pure lime might be converted into a hydraulic lime by the addition of suitable materials, such as burnt clay, roasted shale, brick dust, or certain naturally occurring siliceous materials of volcanic origin, such as puzzuolana, trass and Santorin earth.

* G. V. Rhines, *Municipal Engineering*, Vol. 28, pp. 4–7.

THE CONCRETE INSTITUTE.

THE GEOLOGY OF STONES.

At the last meeting of the Concrete Institute, held at 296, Vauxhall Bridge-road, Westminster, Mr. J. ALLEN HOWE, O.B.E., B.Sc., F.G.S., read a paper entitled "The Geology of Constructional Stone," of which the following is an abstract :—

SANDSTONES.—From the point of view of the engineer and architect the binding medium or the character of the bond between the quartz grains was the feature in sandstones requiring most attention. The grains were usually held together by secondary mineral growths composed of materials derived either in part from the grains themselves or introduced by mineral-bearing solutions. The best and most prevalent binder was silica; others were calcite, iron oxides, clay, and in rarer cases a variety of other minerals; frequently several of those binders were operative in the same stone. A sandstone with a predominant calcite binder behaved under chemical attack like a limestone, but without that stone's good qualities. Besides the nature of the binder the state of aggregation of the grains was an important characteristic; great differences in porosity and grain cohesion were caused by the presence or absence of an inert filling between the grains and by the degree of compression and compacting of the grains.

LIMESTONES.—The majority of limestones employed in construction were originally organic in origin, but they had usually undergone internal changes, such as the partial solution of the calcareous shells and fragments accompanied by recrystallisation of the calcite. As a rule the older limestones were more dense and crystalline than the younger ones, though to that there were some exceptions. Limestones might be almost pure calcium carbonate—some of the carboniferous limestones and chalk—or they might contain variable amounts of argillaceous, carbonaceous, siliceous, or ferruginous matter. Two types of limestone deserved special notice, the oolites and the magnesian limestones. Oolites were built up largely of rounded grains of concretionary origin; stones of that kind were well-known and valued building stones. Considerable differences might be observed between individual types of oolites; in some the grains themselves constituted the structural units of the stone, in others the grains were weak and might even fall out, while the bonding calcite around them gave the stone its strength; in yet another type the grains and the surrounding material played an approximately equal part in giving the stone its mechanical strength. Magnesian limestones were composed of calcium and magnesium carbonate, the latter being combined with calcium carbonate as the double carbonate, dolomite, which tended to crystallise in well-defined rhombic crystals giving the stone a "sandy" feel. Every gradation was found from a calcareous limestone with a few rhombs of dolomite to a pure dolomite rock. The mineral dolomite was rather more resistant to solvents than calcite.

CHEMICAL PROPERTIES.—While it was true that the chemical composition of stone was a factor to be taken into account in considering its application to a particular purpose, it was none the less true that the chemical analysis gave no assistance, commensurate with its cost, in determining the quality of a stone. All stones were built up of minerals of known composition; therefore if the minerals that constituted a stone could be recognised and their relative proportions estimated, its chemical composition could then be estimated with sufficient accuracy by mere inspection. That could be done by cutting a thin slice and subjecting it to microscopic examination. By that method could be learned not only the mineralogical, and hence the chemical, composition, but at the same time, what was often of greater value, the mutual relations of the minerals and internal structure of the stone. Most of the important physical properties of stone were dependent upon the component minerals and their state of aggregation.

DISINTEGRATION AND WEARING.—In some situations stone suffered mechanical wear that might be caused by wind-borne sand, by foot or vehicular traffic, by flowing water carrying an abrasive load, or by storm waves hurling shingle, by the expansion of ice in pores and cracks, or the repetition of seasonal or diurnal changes of temperature. In all situations stone suffered more or less chemical disintegration. That was relatively small in amount in inland country places; it was more pronounced when brine-laden air was driven up from the sea; while in the larger towns its evil effects were only too familiar. Granites and sandstones with good siliceous bond suffered least from chemical wear; limestones and sandstones with a calcareous bond suffered the most. All stones with a fissile tendency were prone to develop that character on exposure. Much of the superficial wear of granites and limestones was due to the gradual opening out of the minerals that possessed a highly-developed cleavage, such as the felspars, calcite, micas and amphiboles.

TESTING.—The two properties of stone about which information was commonly required were its strength and durability. For the first it was customary to investigate the behaviour of the stone when subjected to pressure, tension, shearing, and so on. An estimate of the second quality was a more complex and difficult problem. Since the pressure at the base of the Washington Monument reached only 314.6lbs. per sq. inch, it was clear that there was little point in carrying out the compression test except in so far as it might throw light upon some of the secondary qualities of the stone, and mainly for that reason the test had been applied to determine the effect of soaking and freezing. Even for that purpose it must be regarded as a costly and unreliable method.

The transverse strength of stone, or its resistance to bending, should be, as experience in buildings proved, a more useful test, though it was not so frequently performed. The Canadian tests provided the latest long series of tests available; from these the following figures were taken (lbs. per sq. inch) :—

	Max.	Min.	Av'ge.
Limestones, 33 tests ..	4,291	818	2,224
Crystalline limestones, 8 tests	1,091	3,737	1,907
Sandstones, 10 tests ..	2,186	417	1,283
Granites, 3 tests gave respectively	3,382	2,791	2,480

The tensile strength of stone had been to a great extent ignored, mainly on the quite reasonable ground that stones within a structure were practically always in a condition of pressure and rarely of tension. Hirschwald, however, had shown that very useful results might be obtained by the tensile test, carried out in the same manner as for cement. The test pieces might be of the rectangular form adopted by Hirschwald or might be shaped on the lines of a cement briquette by the aid of a carborundum wheel. The advantages of that test were that it was easy, cheap, and quick, and thus a large number of pieces might be tested. Moreover, the broken ends of the stone were themselves capable of yielding a good deal of information to the experienced observer. It should be noted that in the process of freezing portions of the stone suffered tensile stresses.

In certain cases it was desirable to know the weight per cubic foot, but unless the stone was weighed bone-dry the amount of water it contained at the time of weighing was not known; that probably accounted for the fact that the recorded weights of well-known stones were found to differ by as much as 15 per cent. In most countries a perfectly dry stone was never found in a building; it was necessary, therefore, to allow a fair margin for variation in all estimates of weight. Determination of the specific gravity was required for the measurement of the stone's porosity—a very important character, for it had been well established that the more porous stones were the least resistant to the evil effects of moisture and frost. In that connection the difference between the larger and the smaller pores had to be remembered. A stone with really large pores, like some varieties of Travertine, might be quite free from the disadvantages that attended the stone with a large amount of small pore space. That test, combined with the weighing of the stone when partially, and again when completely, soaked with water furnished the data for the absolute and relative porosity and the ratio of absorption and coefficient of saturation. Neither the water absorption nor porosity must be confounded with the permeability, for that depended not alone on the amount but on the character of the pore space.

The influence of the softening effect due to absorption of water might be expressed as the ratio of the work to be done on the wet stone to that done on the dry stone when tested under similar conditions. That influence had been tested by compression, tension, grinding, rumbling, boring, and the sand-blast. In all types of stone there was a distinct decrease in strength in the wet state, and figures obtained by the different methods of testing yielded fairly concordant results.

The action of frost on stone was in some situations a familiar cause of disintegration, and it had been the subject of much experimental work. The attack of frost on stone was affected by the presence of cracks, by the size of the pores, and the total amount of pore space, but most of all by the content of water at the time of freezing. It had been conclusively proved that the stones above the ground-line in buildings hardly ever contained even half their maximum content of water. The pores must be over 9/10ths full if frost was to exert an effective pressure; consequently it was the fine pores—those that held the water—which counted in above-ground structures, and the coefficient of saturation was now being generally accepted as the most convenient criterion of the frost-resisting quality of a stone. The corrosive action of strong acid vapours and weak acid solutions had often been tried upon stone. There again the action was too drastic if the acids were strong, and was too slow if the solutions were weak.

It might be asked, how far did tests go towards providing a reliable measure of the comparative merits of stone for use in different types of structure and in diverse situations? As regards the purely mechanical properties, tests, when performed under standard conditions, undoubtedly yielded results that might be of value in specific cases. At any rate, mechanical tests gave something that could be measured in a straightforward way. But the mechanical strength had often little to do with the durability of stone, and when an attempt were made to measure that quality they were faced with a series of *imponderabilia*, or at least with a number of factors extraordinarily difficult of evaluation. Pfaff, Hilger, Schütze, Bissinger, and others, had carried out long-duration weathering tests on stone, and thirty years had been reckoned none too long a period for such investigations to bear fruit. But by far the most detailed, logical, and scientific attempt to find a solution to the forecasting of weather-resistance and durability was to be found in the elaborate labours of Hirschwald. But the complexity of the scheme was appalling. Not only must each type of stone be measured by its own special criteria, but its position in the quality scale must be modified, qualified, and adjusted by a host of subordinate character-values.

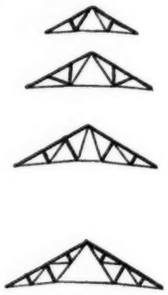
One was driven to the conclusion that while it was possible to learn much about the qualities of stone by tests, it did not appear possible to grade stones according to their weather-resistance or durability by any reasonably short process. In dealing with building stones it would usually suffice to supplement the microscopic examination with tension tests, and the determination of the saturation coefficient. For road-stone the attrition test answered most purposes. If there existed a complete set of tests of British building stones they would no doubt be consulted on occasion; for the present we had to get on as well as we could without the data that was now ready to the hand of engineers and architects in many other States.

NEW INVENTIONS.

A NEW ROOF TRUSS.

The "Cradle" roof truss, illustrated on this page (manufactured by Messrs. James Wild & Co., of 49, Deansgate, Manchester), is a composite truss, in which the compression members are of timber and the tension members of steel. The truss is standardised in spans from 20 ft. to 60 ft., for mass production, thus enabling quick delivery to be given. They are supplied for any kind of roof-covering material, the standard "Cradle" trusses being designed for slates when placed 10 ft. apart. For lighter covering the distance apart can be increased to suit, or, if required, a lighter type of truss is supplied. Builders can be supplied with the steelwork portion only, making the timber parts themselves, if so desired. The timbers only require to be cut to length and rounded off at the ends to suit the steel cradles.

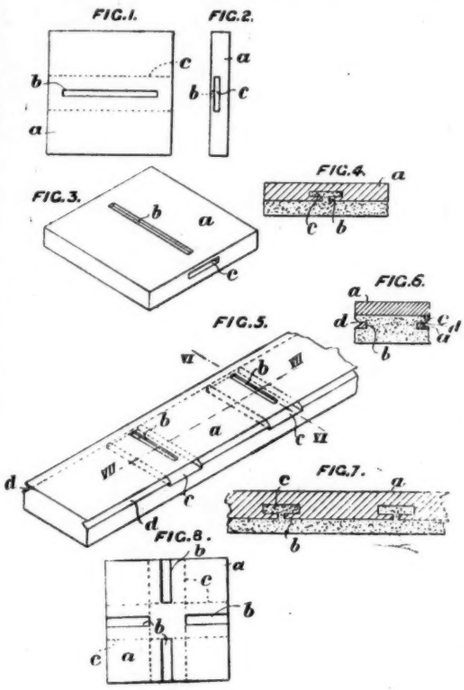
The steel "Cradle," which is the special feature of these trusses, is of pressed steel of semi-circular section, and is used at the ends of all the timbers. Every joint is thus accessible for painting, inspection, or adjustment. The trusses are easily assembled and erected, as the steel tie rods have screwed ends which pass through the cradles and have a nut and special washer at each end. They are light in weight, neat and compact in appearance, convenient for transport, and suitable for rapid and economical building.



THE "CRADLE" ROOF TRUSS FOR VARIOUS SPANS.

NEW METHOD OF SECURING TILES OR BLOCKS.

The new method of keying tiles or blocks to walls or floors, illustrated on this page, is the invention of Mr. W. J. Bennett, of 45, Endsleigh-gardens, Ilford. The invention has for its object the provision of a simple and inexpensive method of enabling such tiles, &c., to be securely fastened down to, or embedded upon, cement surfaces. The invention is principally applicable to tiles for covering floors and walls, but may also be applied to wood blocks or plates for parquetry or similar flooring. The tile is formed with one or more grooves or slots in the back or underside, each of which opens into a relatively wide slot formed in the body of the tile. When the tile is pressed upon a bed or backing of cement or similar plastic material, the latter enters the slot in the back face and fills out into the wide slot in the body of the tile, thus forming a T-shape. This system is claimed to give very great security without detracting from the strength or resistance of the tile. If desired, more than one T-shaped slot can be formed in each tile, as shown in Fig. 5. In Fig. 8 a tile is illustrated with four slot openings (*b*) each connecting with a respective slot space (*c*). The slots (*b*) do not extend right across the tile or block, but stop short of the centre. The invention is not limited to slot openings of the shapes illustrated, and it is possible to attain the same object with slot openings of other elongated shapes. In the case of wood blocks the slot opening and spaces may be produced with circular saws and slotting tools. In the case of pottery or clay tiles a rib or projection may be provided in the matrix, or on the die of a tile press, for forming the slot opening, and blades or similar appliances may be passed across the matrix for forming the passage or slot space in the thickness of the tile. The invention is also applicable to bricks or blocks such as are used for lining the walls of tunnels.

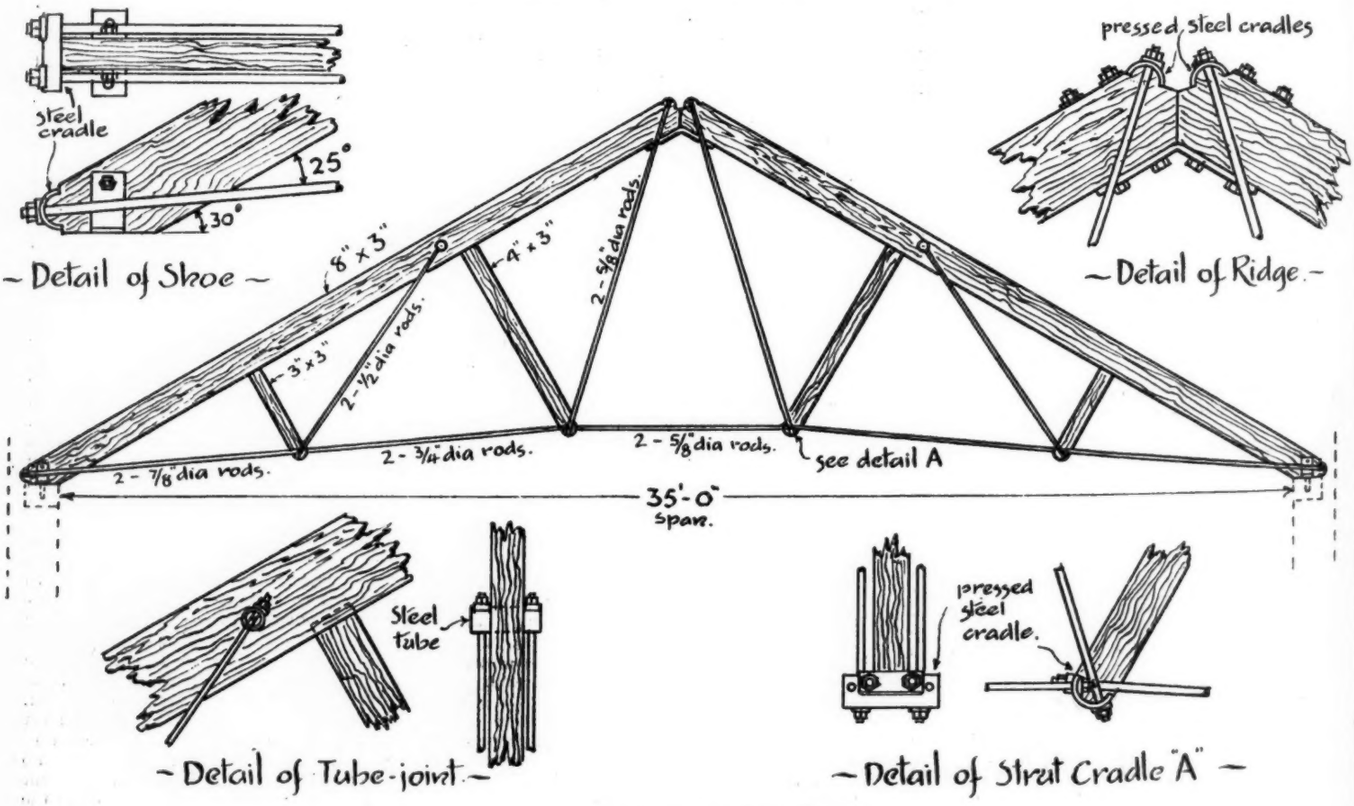


A METHOD OF SECURING TILES TO CEMENT WALLS OR FLOORS.

We understand that the inventor is prepared to sell or license the patent.

Motor Lorry Prices.

When the new "Burford" lorries were placed on the market it was intended to advance the price by 10 per cent. in consequence of many improvements embodied and as a result of the rise in wages and materials, but in view of the present conditions Messrs. Burford & Co., of 10, Regent-street, S.W., have decided that the prices for the new models for the next six months will be as heretofore. The 30-cwt. chassis will be obtainable at £585, and the 2½-ton chassis at £725.



The "Cradle" Roof Truss.

DILUTION IN THE BUILDING INDUSTRY.

THE Executive Council of the National Federation of Building Trades' Employers has decided unanimously to recommend the Federation to accede to the request of the Government that employers should take into the industry 50,000 ex-Service men, and has agreed to issue forthwith a manifesto to the members upon which a vote will be taken to confer authority upon the executive to carry out the request.

A national conference of the joint executives of the different trade unions concerned has been called for March 3 to discuss the position.

Speaking at the annual dinner of the Yorkshire Building Trades' Federation last week, Mr. A. J. Forsdike (President of the National Federation of Building Trades' Employers) said builders knew there was a shortage of labour, but they hoped before long some important steps would be taken in that direction. The thing was not yet matured, but some representatives of the Federation had been at 10, Downing-street, in consultation with the authorities, and it was hoped before long it would be possible to submit a scheme to the Cabinet that would get over some of the difficulties so far as dilution was concerned. The operatives, too, were adopting quite a different attitude to that which they had adopted a few months ago. He believed the men had come to see that the time had arrived when reasonable suggestions had to be taken notice of.

Speaking in the House of Commons last week on the unemployment question, Dr. Macnamara (Minister of Labour) said there was one avenue for the employment of ex-Service men, the door of which the Government had long been desirous of opening—the building trades. There were more than 300,000 such men unemployed, the majority of them unskilled. The representatives of the Builders' Operatives' Unions had rejected the proposal that, in return for the admission and training of 50,000 ex-Service men by the unions, the Government would make a grant of £5 per man to the unions concerned, and would apply the principles of a guaranteed rate of pay for time lost owing to the inclement weather. His information was that 64,222 members of the building trades were unemployed on February 3, and precisely one-half of that number were unskilled labourers, 25,500 were painters—members of a seasonal trade—and 3,524 were carpenters, 1,808 were plumbers, while of bricklayers only 238 were registered as unemployed owing to the completion of jobs and owing to some measure of immobility on the part of the men by reason of the lack of housing accommodation. While there were only 238 bricklayers registered as unemployed on February 3, there were on that date vacancies for 5,576 bricklayers registered at the Labour Exchanges. On February 3 there were 466 bricklayers and plasterers registered as unemployed, but at the same time there were vacancies registered for 6,650 bricklayers and plasterers. Of the several hundred crafts in this country bricklaying and plastering alone were in that happy position. The key to the situation was the extension of building operations—bricklaying, plastering, and tiling. If that were done, labourers, carpenters, plasterers, glaziers—not to speak of furniture makers—would have a chance of substantial and early employment. In the housing schemes promoted by local authorities in England and Wales, contracts had already been signed for the erection of 147,000 houses. Actual building had been commenced only in half that field of operations, and even in that half there was a shortage of 11,300 men, while in the other half there was no building at all, mainly because of the lack of labour. What, then, was the good of the building trade operatives saying that labour in all its branches was capable of meeting the demands of the market at the present time? If the building operatives continued to decline to do so, it was the intention of the Government to do all that was humanly possible to carry out its pledges to the ex-Service men.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the building trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Accrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Altrincham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Ashton-under-Lyne	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½	
Barnsley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Barrow-in-Furness	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Barry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Bath	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bedford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Birkenhead	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½	
Birmingham	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/1	
Bishop Auckland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Blackburn	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Blackpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Bolton	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Bournemouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bradford	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Bridgwater	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7½	
Brighton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bristol	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Burnley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Burton-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Bury	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Cambridge	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Cardiff	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Chatham	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Chelmsford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Cheltenham	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Chester	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Chesterfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Colchester	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Coventry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Crewe	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11	
Darlington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Derby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Doncaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Dudley	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Durham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
East Glam. and Mon. Valleys	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Exeter	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Folkestone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Gloucester	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Grantham	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Grays	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/3	
Grimsby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Great Yarmouth	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Guildford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Halifax	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Harrogate	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hartlepools	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hastings	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Hereford	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Huddersfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hull	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Ipswich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Lancaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Leamington Spa	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Leeds	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Leicester	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1	
Lichfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Lincoln	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Liverpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½	
Llanelly	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
London	2/4	2/4	2/4	2/4	—	2/4½	2/3	2/1	
Loughborough	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1	
Luton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Maidstone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Manchester	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Mansfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/3	2/2½	1/11½	
Merthyr Tydfil	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Middlesbrough	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Newcastle-on-Tyne	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Newport, Mon.	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Northampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Norwich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Nottingham	2/4	2/4	2/4	2/4	2/4	2/4½	2/1	2/1	
Oakham	2/1	2/1	2/–	2/1	2/1	2/1	2/1	1/10	
Oldham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Oxford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Plymouth	2/1	2/1	2/1	2/1	2/1	2/1	2/–	1/10	
Pontypridd	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Portsmouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Preston	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Reading	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Rochdale	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½	
Rochester	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Rugby	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
St. Albans	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/8	
St. Helen's	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Scarborough	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Sheffield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Shrewsbury	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Southampton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Southend-on-Sea	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/11½	1/9	
Southport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
South Shields	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Stockport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Stockton-on-Tees	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Stoke-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Stroud	2/–	2/–	2/–	2/–	2/–	2/–	1/11½	1/9	
Sunderland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Swansea	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Taunton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Torquay	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Wakefield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Walsall	2/2½	2/2½	2/2½	2/2½	2/2½	2/3½	2/2½	1/11½	
Warrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
West Bromwich	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Wigan	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Windsor	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Wolverhampton	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Worcester	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
York	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts xxxiv; Competitions iv; Public Appointments lxxviii; Sales by Auction lxxxii. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

FEBRUARY 28.—**Branston.**—SHOW FIXTURES.—Erection of wood or canvas and wood fencing, shedding, loose boxes, partitions for stock and implements, also woodwork as may be required for Grand Stand, &c., at the Staffordshire Agricultural Society's Exhibition at Branston, Burton-on-Trent. Mr. T. H. Garlick, Secretary, Eccleshall.

FEBRUARY 28.—**Clayton.**—HOUSES, &c.—For street forming and drainage and erection of eight houses, for the U.D.C. Messrs. Samuel Jackson & Son, architects, 11, Tanfield Chambers, Bradford.

FEBRUARY 28.—**Croydon.**—REPAIRS, &c.—Repairs and re-decoration and sundry small works at 254, Brighton-road, for the Board of Guardians. Mr. Henry Berney, architect, 33-35, High-street, Croydon. Deposit, £2 2s.

FEBRUARY 28.—**Eastry.**—CHIMNEYS.—Pulling down and re-building five chimney stacks and re-pointing two chimneys on the Hospital at the Eastry Union Workhouse. Mr. Fred. A. Cloke, Clerk, 51, Strand-street, Sandwich.

FEBRUARY 28.—**Edinburgh.**—DEMOLITION, &c.—Demolition and removal of (1) Brick chimney stack at the Old Burnhouse Brickworks; and (2) Eight small dwelling-houses at Burnside Terrace, Camps. Mr. James A. Williamson, City Architect, Public Works Office, City Chambers, Edinburgh.

FEBRUARY 28.—**Gravesend.**—COTTAGES.—Erection of five bungalow cottages, for the Trustees of the Sailors' and Soldiers' Memorial Homes. Mr. G. E. Clay, architect, 198, Parrock-street, Gravesend. Deposit, 10s. 6d.

FEBRUARY 28.—**Heanor.**—HOUSES.—Erection of 12 houses in Sedgwick-street, for the U.D.C. Mr. A. G. Wheeler, architect, Eastwood. Deposit, £1 1s.

FEBRUARY 28.—**Innerleithen.**—HOUSES.—Erection of 10 houses in five blocks in Buccleuch-street and 10 houses in five blocks on the Leithen-road, for the T.C. Messrs. Dick, Peddie & Walker Todd, 8, Albyn-place, Edinburgh.

FEBRUARY 28.—**Lydney.**—HOUSES.—Erection of 30 houses and the completion of 20 partially erected houses on the Tutnall's-road site at Lydney, Glos., for the R.D.C. Mr. Fothergill Evans, Clerk to the Lydney R.D.C., Chepstow, Mon. Deposit £2 2s.

FEBRUARY 28.—**Mountain Ash.**—COTTAGES.—Erection of 66 cottages at the Penrhiwceiber farm site, for the U.D.C. Housing Architect, Town Hall, Mountain Ash. Deposit, £2 2s.

FEBRUARY 28.—**Northampton.**—HOUSES.—Erection of (a) 80 houses of brick construction on the Abington Lodge Estate, and (b) eight houses on the Far Cotton Estate, for the T.C. Mr. Alfred Fidler, Borough Engineer, Guildhall, Northampton. Deposit, £3 3s.

FEBRUARY 28.—**Warrington.**—HOUSES.—Erection of 93 houses on the Reynolds-street site, for the T.C. Messrs. Wright & Hamlyn, architects, Sankey-street Chambers, Warrington. Deposit £2 2s.

FEBRUARY 28.—**Wimborne.**—CONVERSION.—Erection and conversion of two huts at Wimborne, for the headquarters of D Co. Dorset Territorial Force Association. Mr. F. T. Maltby, architect, Dorchester. Deposit £2 2s.

MARCH 1.—**Abbotsbury.**—BUILDINGS.—Erection of coast-guard buildings at Abbotsbury, near Weymouth. Superintending Civil Engineer, H.M. Naval Depôt, Portland.

MARCH 1.—**Belper.**—HOUSES.—Erection of nine pairs of houses and drainage, &c., for the U.D.C. Lieut.-Col. M. Hunter, architect, Belper. Deposit £2 2s

MARCH 1.—**Carnarvon.**—ALTERATIONS.—For alterations and repairs at East Gate-street, for the Co-operative Society. Mr. H. G. Thomas, architect, Castle Buildings, Carnarvon.

MARCH 1.—**Cookham.**—HOUSES.—Erection of 8 houses at Bray, for the R.D.C. Mr. F. Woods, architect, 86, High-street, Maidenhead.

MARCH 1.—**Dorset.**—COASTGUARD BUILDINGS.—Erection of Coastguard Buildings at Abbotsbury, near Weymouth, Dorset, consisting of houses for four men. Superintending Engineer, H.M. Naval Depot, Portland.

MARCH 1.—**Garvagh.**—MANSE.—Erection of manse, for Presbyterian Church. Messrs. Given & Diamond, Coleraine, Ireland.

MARCH 1.—**Herefordshire.**—RENOVATIONS.—Renovation of the Mansion House, including additional electric fittings and sanitary work, conversion of existing buildings into a hospital for children, the construction of drains and sewage disposal works, for the County Council at the County Sanatorium, Almeley. Tenders marked "Sanatorium," County Surveyors' Office High Town, Hereford. Depo it : 5 5s.

MARCH 1.—**London, W.C.1.**—EXTENSION.—Extension to the Museum Telephone Exchange, for the Commissioners of H.M. Office of Works, Storey's-gate, Westminster, S.W.1. Deposit £1 1s.

MARCH 1.—**Pirton, Herts.**—HOUSES.—Completion of 30 houses at Pirton, Herts, for Hitchin R.D.C. Mr. A. E. Passingham, Clerk to the Council, 5, Bancroft, Hitchin, Herts.

MARCH 1.—**Romford.**—HOUSES.—Erection of 10 houses in the parish of Noak Hill, for the R.D.C. Mr. L. A. Culliford, architect, 3, John-street, Bedford-row, W.C.1.

MARCH 1.—**Salford.**—HOUSES.—Erection of 122 houses, for the T.C. Mr. G. Westcott, architect, 13, Bridge-street, Manchester.

MARCH 1.—**Wealdstone.**—HOUSES.—Erection and completion of the whole or any portion of 140 houses, for the U.D.C., in connection with the housing scheme. Mr. R. J. Bryant, Council Offices, Wealdstone. Deposit, £2 2s.

MARCH 2.—**Carmarthen.**—HOUSES.—Erection of 24 houses on the Morgan Arms Field, for the T.C. Mr. F. Hughes, Borough Surveyor, John-street, Carmarthen. Deposit, £2 2s.

MARCH 2.—**Croydon.**—PAINTING.—Repair and external painting required at the Croydon Sanatorium, North Cheam, Surrey, for the Croydon and District Joint Small-Pox Hospital Board. Mr. R. M. Chart, Surveyor to the Board, Lower-green, Mitcham, Surrey.

MARCH 2.—**Falmouth.**—HOUSES.—Erection of a further 56 houses at Falmouth. Town Clerk, Municipal Buildings, Falmouth.

MARCH 2.—**Llanelly.**—ADDITIONS.—Erection of extensive additions and alterations to Penyfai House, Llanelly, for Mr. Joseph Holmes. Messrs. W. Griffiths & Son, architects, Falcon Chambers, Llanelly. Deposit £2 2s.

MARCH 2.—**Oxford.**—HOUSES.—Erection of four houses on the Ferry Hinksey-road site, for the T.C. City Engineer's Office, Town Hall, Oxford.

MARCH 2.—**Southend-on-Sea.**—WOODEN BUILDING.—Erection of a wooden-framed building to be used as conveniences at Southchurch-road, for the T.C. Mr. R. H. Dyer, Borough Engineer, Municipal Buildings, Southend-on-Sea. Deposit £1 1s.

MARCH 2.—**Ulverston.**—HOUSES.—Erection of two houses at Allithwaite, for the R.D.C. Mr. Henry T. Fowler, architect, Cornwallis-street, Barrow-in-Furness.

MARCH 2.—**Wandsworth, S.W. 18.**—PAINTING.—Internal painting at St. John's Hill Infirmary, St. John's Hill, Wandsworth, S.W., for the Guardians of the Union. Mr. F. J. Curtis, Clerk, Union Offices, St. John's Hill, Wandsworth, S.W.18.

MARCH 3.—**Ballachulish.**—HOUSES.—Erection of one block of four houses and four blocks of two houses at Ballachulish, for the Argyll C.C. Mr. R. W. Campbell, architect, Columba Buildings, Oban.

MARCH 3.—**Letchworth.**—SCHOOL.—Erection and completion of a new County Council School at West View, Letchworth, for Hertfordshire C.C. Lt.-Col. A. Ernest Prescott, County Surveyor, County Surveyor's Office, Hatfield. Deposit £1 1s.

MARCH 3.—**Swansea.**—WALLS, &c.—Taking down of old cottages, Wellington-street, and building of a masonry boundary wall to the Swansea Gas Works, for the T.C. Mr. J. Richard Heath, Borough Engineer, Guildhall, Swansea.

MARCH 3.—**Wainscot.**—HOUSES.—Erection of 10 houses at Wainscot, for Strood R.D.C., Kent. Messrs. Bridgland & Clay, architects, 198, Parrock-street, Gravesend. Deposit, £2 2s.

MARCH 4.—**Hull.**—PAVILION.—Erection of an Infectious Diseases Pavilion, including drainage, &c., at the Cottingham Castle Estate, for the T.C. Mr. Joseph H. Hirst, City Architect, Guildhall, Hull. Deposit £2 2s.

MARCH 4.—**Rye.**—HOUSES, &c.—Erection of houses in following parishes: Brede, 12 houses and construct two wells and two private roads; Northiam (Mill Corner), six houses and sink one well. Mr. H. M. Jeffery, architect, 1B, Havelock-road, Hastings.

MARCH 5.—**Barton-upon-Irwell.**—HOUSES, &c.—Erection of 138 houses at Clifton, Davyhulme, and Flixton, also for the construction of roads and sewers, for the R.D.C. Mr. Geo. G. Forster, architect, Greenlane, Patricroft, near Manchester. Deposit, £2 2s.

MARCH 5.—**Dunfermline.**—HOUSES.—Erection of 32 houses, for the T.C. Burgh Engineer, City Chambers, Dunfermline. Deposit, £2 2s.

MARCH 5.—**Liskeard.**—HOUSES.—Erection of the first instalment of 32 houses, for the T.C. Messrs. Truscott & Parkes Lees, architects, Liskeard. Deposit, £3 3s.

MARCH 5.—**Renfrew.**—HOUSES.—Erection for the Renfrew C.C. of houses at Jenny Lind, Thornliebank (84), Nitshill scheme (54), Gateside, Barrhead (48), Harvey-street, Yoker (60). Mr. Jas. A. M'Collum, District Clerk, 15, West George-street, Glasgow. Deposit £1 1s.

MARCH 7.—**Cork.**—ALTERATIONS.—Alterations to the library premises, Pembroke-street, for Messrs. R. & H. Hall. Messrs. Chillingworth & Levie, architects, 11, South Mall, Cork.

MARCH 7.—**Gourock.**—BUILDING.—Building for the accommodation of pilots at Gourock Pier, for the Caledonian Railway Co., Company's Engineer, Buchanan-street Station, Glasgow. Deposit, £2 2s.

MARCH 7.—**Leeds.**—PAINTING.—Painting and cleaning at the Infectious Diseases Hospital, Seacroft, and the Tuberculosis Sanatorium, Killingbeck, for the T.C. Steward's Office, Seacroft Hospital.

MARCH 7.—**Warrington.**—PAINTING.—For painting and decorating inside Thewlis-street schools, for the T.C. Mr. A. M. Ker, Borough Engineer, Warrington.

MARCH 7.—**Wigan.**—HOUSES, &c.—Erection of 32 houses, construction of roads, &c., at Shevington, for the R.D.C. Mr. P. Fairclough, surveyor, 18, Victoria-buildings, King-street, Wigan.

MARCH 8.—**Belper.**—HOUSES.—Erection of three pairs of type A and two pairs of type B houses, with the necessary drainage, fencing, &c., at Holloway, near Matlock, for the R.D.C. Mr. John B. Mason, architect, Duffield.

*MARCH 8.—**Broadstairs and St. Peters.**—HOUSES.—Erection and completion of 54 houses on land situate at St. Peters. Mr. E. E. Moodey, architect, 109, High-street, Broadstairs. Deposit £2 2s.

MARCH 8.—**Leeds.**—REPAIRS.—Repairs to buildings and furniture, for the Education Committee. Architect's Section, Education Department, Calverley-street, Leeds.

MARCH 8.—**Lincoln.**—ADDITIONS.—For additions and improvements to Branston Hall, near Lincoln, to fit it up as a County Sanatorium, and for the erection of an open-air school in connection, for the Lindsey C.C. Messrs. Scorer & Gamble, architects, Bank-street Chambers, Lincoln. Deposit, £2 2s.

*MARCH 9.—**Goole.**—HOUSES.—Erection of 26 houses, Type B, southerly, on the Pasture-road site, for the U.D.C. Mr. J. H. Castle, Engineer and Surveyor, Council Offices, Goole. Deposit £2.

MARCH 9.—**Hackney.**—EXTENSION.—For building works, being an extension of the electricity power house at Millfields-road. Borough Electrical Engineer, 306, Mare-street, Hackney, E. 8. Deposit, £5 5s.

MARCH 9.—**Lancaster.**—ADDITIONAL BUILDINGS.—Erection of additional buildings at Rufford Hall Sanatorium, Rufford, Lancaster. Director of Contracts, H.M. Office of Works, London, S.W.1. Deposit £1 1s.

*MARCH 9.—**Ruislip-Northwood.**—HOUSES.—Erection of 91 houses for the U.D.C. Mr. Edmund R. Abbott, Clerk to the Council, Council Offices, Northwood.

MARCH 9.—**Liverpool.**—PARCELS OFFICE.—Erection of Liverpool New Parcels Office, for the Commissioners of His Majesty's Works. Director of Contracts, H.M. Office of Works, London, S.W.1 Deposit £1 1s.

*MARCH 10.—**Anglesey.**—HOUSES.—Erection of 42 houses for the Anglesey (East) Joint Housing Board in various parishes. Board's Office, 12, High-street, Menai Bridge.

MARCH 10.—**Biggar.**—HOUSES.—Erection of 12 dwelling houses in blocks of two at Southcrofts, Biggar, for the T.C. Mr. L. A. Morrison, architect, Murrayfield, Biggar.

*MARCH 10.—**Cleethorpes.**—HOUSES.—Erection of 54 houses for the U.D.C. Engineer and Surveyor, Council Offices, Cleethorpes. Deposit £2 2s.

MARCH 12.—**Halifax.**—FOUNDATIONS.—Excavating, concreting and brickwork required in laying down the foundations for two cooling towers at the electricity works, for the T.C. Mr. James Lord, Borough Engineer, Crossley-street, Halifax. Deposit, £2 2s.

MARCH 15.—**Brentford.**—HOUSES.—Erection of 70 houses, for the U.D.C. Mr. W. J. Westlake, Surveyor to the Council, Clifden House, Boston-road, Brentford.

*MARCH 15.—**Middlesex.**—COTTAGES.—Erection of two pairs of cottages at Jersey-road, Lampton, near Hounslow. County Engineer, Middlesex C.C., Middlesex Guildhall, Westminster, S.W.1. Deposit £2.

*MARCH 17.—**Southampton.**—HOUSES.—For building any number of houses, up to a maximum by one builder of 100, in pairs of parlour and non-parlour types. Mr. R. R. Linthorne, Town Clerk, Municipal Offices Southampton.

*MARCH 17.—**Stockton-on-Tees.**—HOUSES.—Erection of 226 houses on land at Norton, known as the Blue Hall Farm Site, for the Borough Council. Housing Architect, 90, High-street, Stockton. Deposit £3 3s.

MARCH 23.—**Chorley.**—PAINTING.—For painting the Town Hall Assembly Room, Refreshment Room, &c., for the T.C. Borough Surveyor's Office, Town Hall, Chorley.

NO DATE.—**Epsom.**—HOUSES.—Erection of 161 houses, for the U.D.C. Mr. E. G. Wilson, Clerk of the Council, Church-street, Epsom.

NO DATE.—**Hitchin.**—HOUSES.—Erection of 104 cottages on the following sites: Nup End (6); Knebworth (18); Broadwater (8); Offley (12); Whitwell (24); Preston (10); Shephall (4); Weston (16); Radwell (6), for the R.D.C. Mr. A. E. Passingham, Clerk, 5, Bancroft, Hitchin, Herts. Deposit, £2.

NO DATE.—**Newcastle-on-Tyne.**—PAINTING.—Painting at police buildings in the County, for the Northumberland Standing Joint Committee. Mr. J. A. Bean, County Surveyor, Moot Hall, Newcastle-on-Tyne.

FURNITURE, MATERIALS, etc.

FEBRUARY 28.—**Bethnal Green.**—MATERIALS.—Works and supply of materials, for the B.C. Mr. A. E. Darby, Borough Engineer and Surveyor, Town Hall, Cambridge-road, Bethnal Green, E.2.

FEBRUARY 28.—**Gainsborough.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. S. W. Parker, Surveyor, Council Offices, Gainsborough;

FEBRUARY 28.—**Ilford.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. H. Shaw, Surveyor, Town Hall, Ilford.

FEBRUARY 28.—**London.**—SANITARY FITTINGS.—Supply to the Commissioners of H.M. Works of 200 w.c. sets. Director of Contracts, H.M. Office of Works, Storey's-gate, S.W.

FEBRUARY 28.—**Margate.**—PIPES.—Supply of cast-iron pipes and concrete tubes, to the T.C. Mr. E. Brooke, Town Clerk, 23, Grosvenor-place, Margate.

FEBRUARY 28.—**Shoreham-by-Sea.**—ROAD MATERIAL.—Supply of 350 tons of granite, quartzite or other stone, for the U.D.C. Mr. A. W. Nye, surveyor, Shoreham-by-Sea.

FEBRUARY 28.—**Southwell.**—ROAD MATERIAL.—Supply of road material to the R.D.C. Mr. Robert Morris, Highway Surveyor, Easthorpe, Southwell.

FEBRUARY 28.—**Stockton-on-Tees.**—MATERIALS.—Supply of materials to the T.C. Borough Surveyor, the Gas Manager and the Electrical Engineer, Borough Hall, Stockton-on-Tees.

MARCH 1.—**Chingford.**—MATERIALS.—Supply of road materials, collection of refuse, &c., for the U.D.C. Mr. L. C. Bowen, Clerk, 34, Station-road, Chingford, E.4.

MARCH 1.—**Derby.**—MATERIALS.—Supply of materials to the T.C. Mr. C. A. Clews, Borough Surveyor, Babington-lane, Derby.

MARCH 1.—**Hadleigh.**—MATERIALS.—Supply to U.D.C. of 500 tons of 2 in. granite, and 6,800 gallons of refined tar. Mr. H. W. F. Grimwade, Clerk, Hadleigh, Suffolk.

MARCH 1.—**Yeovil.**—ROAD MATERIAL, &C.—Supply of granite macadam, &c., and hire of steam roller and scarifier, for the T.C. Mr. A. J. Price, Borough Surveyor, Municipal Offices, Yeovil.

MARCH 2.—**Caistor.**—MATERIALS.—Supply of granite, slag, tar macadam and distilled tar, to the R.D.C. Surveyor, Council Offices, Caistor, Lincolnshire.

MARCH 2.—**Hove.**—MATERIALS.—Supply of Portland cement, stoneware pipes, artificial stone paving slabs, and broken granite, to the T.C. Mr. H. H. Scott, Borough Surveyor, Town Hall, Hove.

MARCH 2.—**Southwark.**—MATERIALS.—Supply of materials to the B.C. Town Hall, Walworth-road, S.E.17.

MARCH 3.—**Bridlington.**—ROAD MATERIALS.—Supply of road materials to the R.D.C. Mr. John Haggitt, District Surveyor, 42, Marshall-avenue, Bridlington.

MARCH 3.—**Flaxton.**—MATERIAL.—Supply of whinstone and broken slag to the R.D.C. Surveyor, 4, New-street, York.

MARCH 3.—**Lambeth.**—MATERIALS.—Supply of flints, ballast, sand, &c., to the B.C. Mr. H. E. Anderson, Borough Engineer, Town Hall, Brixton Hill, S.W.2

MARCH 3.—**Stafford.**—MATERIALS.—Supply of granite and slag, tools, &c., to the R.D.C. Mr. R. W. Marson, Surveyor, 3, Crabbery-street, Stafford.

MARCH 3.—**Strood.**—MATERIALS.—Supply of highway materials and carting, for the R.D.C. Mr. L. Randerson, Surveyor, Meopham, near Gravesend.

MARCH 4.—**East Ham.**—MATERIALS.—Supply of road and other materials to the B.C. Mr. C. Eustace Wilson, Town Clerk, East Ham, E.

MARCH 5.—**Clown.**—MATERIALS.—Supply of road materials to the R.D.C. Mr. J. T. Pears, surveyor, Hollin Hill, Clown, Chesterfield.

MARCH 5.—**Padiham (Lancs.).**—ROAD MATERIALS, &c.—Supply of materials, to the U.D.C. Mr. R. Ratcliffe, Surveyor, Council Offices, Padiham.

MARCH 5.—**South Shields.**—MATERIALS.—Supply of road and other materials, to the T.C. Mr. F. P. Sissons, Borough Engineer, Town Hall, South Shields.

MARCH 7.—**Middleton.**—MATERIALS.—Supply of road materials to the T.C. Mr. J. P. Walmsley, Town Clerk, Town Hall, Middleton.

MARCH 7.—**Midlothian.**—TAR, &C.—Supply of refined coal tar, coal tar pitch, and pitch oil, for the C.C. Road Office, County Buildings, Edinburgh.

MARCH 7.—**Morley.**—MATERIALS.—Supply of road and other materials, for the T.C. Mr. F. Turner, Borough Engineer, Town Hall, Morley.

MARCH 7.—**Whitefield.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. George M. Denton, Surveyor, Council Offices, Whitefield.

MARCH 8.—**Littleborough.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. George H. Wild, Surveyor, Council Offices, Littleborough.

MARCH 9.—**Shoreditch.**—MATERIALS, &C.—Supply of (1) broken granite; (2) plumbers' work; (3) smiths' work; (4) drain pipes, junctions, bends, &c. Borough Surveyor, Town Hall, Old-street, E.C.2.

MARCH 10.—**Hendon.**—MATERIALS.—Supply of materials, &c., and execution of works for the R.D.C. Mr. J. A. Webb, surveyor, Council Offices, Stanmore.

MARCH 10.—**Thakeham.**—ROAD MATERIALS.—Supply of basalt, granite, flints and tar, to the R.D.C. Mr. Wm. Forrester, surveyor, Storrington, Pulborough, Sussex.

NO DATE.—**Godalming.**—MATERIALS.—Supply of paint, steam fittings, highway tools, &c., to the T.C. Mr. G. Bertram Hartfill, Borough Surveyor, Godalming.

NO DATE.—**Newbury.**—STREET LAMPS.—Supply of 25 lamp heads for street lighting. Mr. S. J. Lee Vincent, Borough Surveyor, Newbury.

ENGINEERING, IRON AND STEEL.

FEBRUARY 28.—**Dunsanby Head.**—CONSTRUCTION.—Construction of a fog signal and lighthouse station, consisting of a block of three dwelling houses and engine room and stores block and a small tower, &c., 1¼ mile of approach road, and a store at John o' Groats. Mr. C. Dick Peddie, Secretary, Northern Lighthouse Office, 84, George-street, Edinburgh. Deposit, £2 2s.

MARCH 1.—**Portsmouth.**—PLANT.—For engines, plant, &c., for main drainage, for the T.C. Mr. G. Midgley Taylor, 36, Victoria-street, S.W.1. Deposit £5.

MARCH 1.—**Swansea.**—STEEL SHEDS.—Supply and erection of buildings in steel framing, with corrugated steel sheeting: (1) Shed for steam wagons and rollers and garage for motor-car; (2) shed for electric vehicles, for the T.C. Mr. Richard Heath, Borough Engineer, Guildhall, Swansea.

MARCH 2.—**Beddington.**—FENCING.—Erection of 45 rods of new fencing, and refixing fences at Isolation Hospital, for the Wardle Valley Joint Hospital Board. Mr. R. M. Chart, surveyor, Lower Green, Mitcham.

MARCH 2.—**Dumfries.**—ELECTRIC INSTALLATION.—Providing and erecting the electric lighting installation at Woodbank Hostel, Dumfries, for the Education Authority. Mr. W. Arnott, M.Inst.C.E., 163, Hope-street, Glasgow. Deposit £1 1s.

MARCH 2.—**Edinburgh.**—FENCING.—For new steel unclimbable hurdle fencing and gates on frontages at Peffermill-road and Colinton-road, for the T.C. Mr. Andrew Grierson, Town Clerk, City Chambers, Edinburgh.

MARCH 3.—**Cradley Heath.**—BRIDGE.—Reconstruction of Lodge Forge Bridge, crossing the River Stour at Lodge Forge-road, Cradley Heath, Staffordshire. Council House, Old Hill, Staffs.

MARCH 3.—**Johannesburg.**—WATER METERS.—Supply of 1,200 ¾ in. water meters, to the Municipal Council. Engineering Office of the Department of Overseas Trade, 35, Old Queen-street, S.W.

MARCH 4.—**Bombay.**—REFUSE DESTRUCTOR.—Manufacture, erection and equipment of a refuse destructor within the City for the incineration of 200 tons of refuse per day. Sir John Wolfe Barry, Lyster & Partners, Dartmouth House, 2, Queen Anne's Gate, Westminster, S.W.1. Charge, £2.

MARCH 4.—**India.**—RAILWAY MATERIAL.—Supply of steel rails, 90 lb. per yard, fishplates, fishbolts, steel keys for sleepers, wrought iron or mild steel hoop, and wheels and axles, to the High Commissioner for India. Director-General of Stores, India Office, Whitehall, S.W.1.

MARCH 5.—**Southampton.**—QUAY WORKS.—Constructing a new head (ferro-concrete) to the Town Quay, for the Harbour Board. Mr. E. Cooper Poole, Engineer, Harbour Board Offices, Town Quay, Southampton. Deposit, £1.

MARCH 5.—**Swansea.**—PIPES.—Supply of cast-iron pipes and waterworks appliances. Water Engineer and Manager, Guildhall, Swansea.

MARCH 7.—**Croydon.**—COOLING TOWERS.—Supply of two natural draught cooling towers, for the T.C. Borough Electrical Engineer, Electricity Works, Factory-lane, Croydon.

MARCH 8.—**Paddington.**—GIRDERS, &C.—Supply of about 84 tons of steel girders and other iron and steel work, to the G.W.R. Co. Engineer, Paddington Station, London.

MARCH 9.—**London.**—SCREWSPIKES.—Supply of 530,000 steel screwspikes with rolled threads for 18 kilos f.f. rails, to the Egyptian Delta Light Railways, Ltd. Offices of the Egyptian Delta Light Railways, 210–216, Gresham House, Old Broad-street, E.C.2. Charge £1 1s.

MARCH 10.—**Manchester.**—PURIFIER HOUSE, &C.—Erection of steel-framed purifier house and foundations, and construction and erection of purifiers, for the Gas Department. Mr. Godfrey W. Kaye, secretary, Gas Department, Town Hall, Manchester. Deposit £3 3s.

MARCH 15.—**London.**—RAILWAY PLANT.—Supply of rails, fishplates, nuts, screw spikes, &c., for the Jodhpur Bikaner Railway Co., Ltd. Messrs. Rendel, Palmer & Tritton, engineers, 13, Dartmouth-street, Westminster, S.W.1. Charge £1 1s.

MARCH 16.—**Wallasey.**—GAS PLANT, &C.—(1) The supply, welding up, and testing of about 4 miles of high pressure steel mains, 12 in. to 6 in. diameter; (2) supply of six 6 in. district gas governors, with valves: (3) manufacture and erection of two rotary gas exhausters, with steam engines combined; (4) manufacture and erection of three rotary gas compressors, with steam engines combined; (5) manufacture and erection of roofing over three bays of a new purifier house. Mr. J. H. Crowther, Engineer, Gasworks, Limekiln-lane, Wallasey.

MARCH 24.—**Barnsley.**—FILTERS.—Supply and erection of mechanical filters, for the T.C. Waterworks Engineer, Doncaster-road, Barnsley. Deposit £3 3s.

APRIL 18.—**Montevideo.**—BRIDGE.—Construction of superstructure of bridge over the Santa Lucie River, for the Ministry of Public Works. Enquiry Office, Department of Overseas Trade, 35, Old Queen-street, S.W.

MAY 2.—**South Africa.**—GRAIN ELEVATORS.—Construction of (*a*) one terminal grain elevator at Cape Town, capacity 30,000 tons of 2,000 lbs.; (*b*) one terminal grain elevator at Durban, capacity 42,000 tons of 2,000 lbs.; (*c*) 34 country elevators, ranging in capacity from 1,800 to 5,800 tons of 2,000 lbs. High Commissioner for the Union of South Africa, 32, Victoria-street, London. Deposit £100.

MAY 31.—**Bombay.**—WATER WORKS.—Construction of about 105 miles of steel and reinforced concrete pipe lines (from 72 in. to 57 in. diameter), and contingent works, for the Corporation. Messrs. Taylor & Sons, consulting engineers, 36, Victoria-street, Westminster, London, S.W. Deposit, £2 each specification (8).

JUNE 15.—**Walton-on-Thames.**—PUMPING MACHINERY.—Supply and erection of pumping machinery near Walton-on-Thames, Surrey, for the Metropolitan Water Board. Mr. Henry E. Stilgoe, Chief Engineer, Offices, Rosebery-avenue, E.C. Deposit, £5.

JUNE 20.—**China.**—BRIDGE.—The Peking-Hankow Line (Chinese Government Railways) invites sealed proposals for designing and building a new steel bridge, about 2,800 metres in length, across the Yellow River (Hoangho). Plans, &c., by telegraph from the following offices: Peking-Hankow Railway, Peking, China; Chinese Legation, London; British Legation, Peking, China. Deposit £6.

NO DATE.—**Hoylake.**—TUNNEL.—For extending a tunnel or heading in the No. 1 well at West Kirby, Cheshire, of the Hoylake and West Kirby Gas & Water Co. Mr. A. G. Readdy, Secretary, 5, Quadrant, Hoylake, Cheshire.

ROAD, SANITARY, AND WATER WORKS.

FEBRUARY 28.—**Barnsley.**—PIPE LAYING.—Excavating for, laying and jointing about 4,000 lin. yards of 3 in., 4 in. and 6 in. cast-iron pipes, valves, &c., for the T.C. Waterworks Engineer, Doncaster-road, Barnsley.

FEBRUARY 28.—**Brynmawr.**—ROADS AND SEWERS.—Construction of roads and sewers (approximately 1½ miles), in connection with housing scheme, for the U.D.C. Mr. Henry Waters, Architect, Brynmawr. Deposit, £4 4s.

FEBRUARY 28.—**Gellygaer.**—ROAD.—Construction of third section of road between Hengoed and Ystrad Mynach, about three-quarters mile in length, for the U.D.C. Mr. F. Read, Surveyor to Council, Council Offices, Hengoed. Deposit, £2 2s.

FEBRUARY 28.—**Newton Abbot.**—ROADS, &C.—Construction of roads and sewers in connection with the second instalment of Milber housing scheme, for the U.D.C. Mr. Josias C. Beare, architect, 42, Devon-square, Newton Abbot. Deposit, £2 2s.

FEBRUARY 28.—**Tadcaster.**—ROADS AND SEWERS.—Construction of roads and the laying of sewers in connection with housing schemes, for the R.D.C. Mr. C. Castelow, architect, 10, Park-row, Leeds.

FEBRUARY 28.—**Wath.**—BORE.—Construction of a bore in the parish of Wath, for the R.D.C. Mr. R. Bird, 6, Firs-avenue, Ripon.

MARCH 1.—**Bedwas.**—ROADS AND SEWERS.—Construction of roads and sewers at Machen housing site, Bedwas housing site, and Tre Thomas housing site; extension of water main, &c., at Machen, and extension of sewers at Machen, for the U.D.C. Mr. A. S. V. Taylor, Surveyor, Council Offices, Bedwas.

MARCH 1.—**Edinburgh.**—WATER WORKS.—Forming springhead, providing and laying 1¼ in. cast-iron and 3 in. and 4 in. fireclay pipes, constructing ram house, &c., for the managers of the Royal Infirmary. Messrs. J. & A. Leslie & Reid, C.E., 72A, George-street, Edinburgh.

MARCH 1.—**Wandsworth.**—STREET WORKS.—Making up and paving of Cricklade-avenue, Streatham, for the B.C. Mr. P. Dodd, Surveyor, 215, Balham High-road, S.W.17.

MARCH 2.—**Castle Ward.**—ROADS.—For road making for one year in the district of the R.D.C. Mr. David Hope, surveyor, Ponteland, Mosley-street, Newcastle-upon-Tyne.

MARCH 3.—**Dewsbury.**—DRAINAGE.—Installation of drainage scheme at Saville Town, Dewsbury, for Messrs. J. Brown & Co., Ltd. Messrs. Firth, Son, & Blackburn, A.R.I.B.A., architects, 22, Wellington-road, Dewsbury.

MARCH 4.—**Barnsley.**—ROADS, &C.—Construction of roads and laying of new surface water drains and sewers on Wilthorne building site, for the T.C. Borough Engineer, Manor House, Barnsley.

MARCH 5.—**Harrow-on-the-Hill.**—STREET WORKS.—For street improvement in Station-road, for the U.D.C. Mr. J. P. Bennetts, Surveyor, Council Offices, Harrow. Deposit £1.

MARCH 5.—**Liskeard.**—ROADS, &C.—Construction of road and sewerage works in connection with the Council's housing scheme. Messrs. Truscott & Parkes Lees, architects, Liskeard. Deposit £2 2s.

MARCH 5.—**Tadcaster.**—WATER MAIN.—Providing and laying about 220 yards of 2 in. and 3 in. cast-iron water pipes, and erection of water storage tank in South Milford, for the R.D.C. Mr. H. C. Wood, Sanitary Surveyor, Tadcaster.

MARCH 5.—**Worsborough.**—DRAINS.—For construction of drainage works, for the U.D.C. Mr. T. Shield, surveyor, Saville House, Worsborough Bridge. Deposit £2 2s.

MARCH 7.—**Devon.**—ROAD TARRING.—For the carrying out of main road surface tarring work during season 1921, for the C.C. Mr. Brian S. Miller, Clerk, The Castle, Exeter.

MARCH 10.—**Southwell.**—LAY-OUT.—Lay-out of 19 acres of land in connection with housing scheme at Rufford, for the R.D.C. Messrs. Sands & Walker, Milton Chambers, Milton-street, Nottingham. Deposit £2 2s.

MARCH 12.—**Grays.**—SEWERAGE WORKS.—Construction of about 1,060 yards of concrete tube and cast-iron sewers of 36 in. diameter; roadway and underground screen and pump suction chambers, for the Thurrock, Grays and Tilbury Joint Sewerage Board. Mr. G. Midgley Taylor, M.Inst.C.E., 36, Victoria-street, Westminster, S.W.1. Deposit £5.

MARCH 15.—**Hartland.**—DRAINAGE.—Construction of drainage scheme at the Parish Church. Mr. F. J. Wilton, Myrtle Cottage, Hartland.

MARCH 28.—**Simla.**—WATERWORKS PLANT.—Supplying, erecting and running for one month a new pumping plant, consisting of three units and steel rising mains, &c., with all fittings for the water supply, for the Simla Municipality. Mr. A. F. Henderson, c.o. Messrs. Henry S. King & Co., Cornhill, E.C. Charge £1.

Auction Sales, Tenders, etc.

FEBRUARY 28.—**Hendon, N.W.**—Messrs. Joseph Hibbard & Sons will sell the second portion of surplus stock and plant, by order of the Grahame White Co., Ltd., at the Aerodrome, Church-lane, Hendon, saw-mill plant, timber stock, private and commercial motors, office and other furniture, stores, motor accessories, &c., pile carpeting and linoleum. Auctioneers, 15, Newington-green, Islington, N.

MARCH 1 AND 2.—**Herts.**—Messrs. Joseph Hibbard & Sons will sell, by order of Messrs. The Timber & Operators & Contractors, Ltd., at Marshmoor Mill, Herts, stock of well-seasoned English timber of large varieties. Auctioneers, 15, Newington-green, Islington, N.

*MARCH 1 AND 2.—**Walworth, S.E.**—Messrs Hooker & Rogers will sell, without reserve, at Merrow-street, Walworth-road, timber and building materials vans, horses, &c. Auctioneers, 4, High-street, Croydon, S.E.

MARCH 9.—**Norwich.**—Messrs. Hooker & Rogers will sell, at Costessey Hall, Norwich, carved oak panelling, fittings, timber and paving stone, &c., arising from the demolition of the East Wing and Prince's rooms. Auctioneers, 4, High-street, Croydon.

✱MARCH 9 AND 10.—**Gloucester.**—Messrs. Bruton, Knowles & Co. will sell by direction of the Disposal Board, at Leighterton Aerodrome, 82 buildings and equipments. Auctioneers, Albion Chambers, King-street, Gloucester.

✱MARCH 11.—**Gloucester.**—Messrs. J. Pearce, Pope & Sons will sell, by direction of the Disposal Board, at the National Filling Factory (C.S.D., Depot 251), Quedgeley, modern plant and machinery. St. Aldate Chambers, Gloucester.

MARCH 11.—**Shirley near Croydon.**—Messrs. Robert W. Fuller, Moon & Fuller will sell, by direction of the Disposal Board, 41 Sectional huts, at Addington Park, Shirley, near Croydon. Auctioneers, 83, High-street, Croydon.

✱MARCH 15.—**Norfolk.**—Messrs. Joseph Hibbard & Sons will sell, by order of the Board of Trade, at Stratton, Strawless, stock of timber of various assortments. Auctioneers, Newington-green, Islington, London, N.16.

✱MARCH 15.—**Winchester.**—Messrs. Gudgeon & Sons will sell, by direction of the Disposal Board, at Hazeley Down Camp, near Winchester, camp buildings of various types. Auctioneers, The Auction Mart, Winchester.

MARCH 31.—**London, W.**—Messrs. Knight, **Frank** & Rutley will let by auction by direction of the Council of the City of Westminster and the Guardians of the Westminster Union, Portland-street Workhouse, in Hanover-square Estate Room. Auctioneers, 20, Hanover-square, London, W.1.

Competitions.

(*See Competition News, page* 248.)

Public Appointments.

FEBRUARY 28.—**Liverpool.**—Building foreman required by the Tramways and Electric Power and Lighting Committee to take charge of the building section of the Tramways Department, and any other duties which may be allotted to him. General Manager, Liverpool Corporation Tramways, 24, Hatton-garden, Liverpool. Endorsed "Building Foreman."

FEBRUARY 28.—**Rubery Hill, near Birmingham.**—Clerk of Works required by the Rubery Hill Mental Hospital. The Medical Superintendent, Rubery Hill Mental Hospital, Rubery, near Birmingham.

FEBRUARY 28.—**Thirsk.**—Clerk of works required by the R.D.C. in connection with their housing scheme. Mr. William Swarbreck, Clerk to the Council, Finkle-street, Thirsk. Endorsed "Clerk of Works."

✱MARCH 1.—**London, S.W.1.**—Technical Assistant, Parks Department (Second Class), by the L.C.C. Clerk to the Council, County Hall, Spring Gardens, S.W.1.

✱MARCH 3.—**Newcastle-upon-Tyne.**—Clerk of Works required by the City Council in connection with their housing schemes. Housing Architect, 18, Cloth Market, Newcastle-upon-Tyne.

MARCH 4.—**Southampton.**—Two Junior Draughtsmen, a Junior Assistant, two Junior Quantity Surveyors and Accountants, a Junior Shorthand-Typist; ex-Service men preferred. Mr. A. L. Roberts, County Architect, The Castle, Winchester.

MARCH 5.—**Barrow-in-Furness.**—Assistant required in the Borough Engineer and Surveyor's Department, by the Corporation. Borough Engineer, Town Hall, Barrow-in-Furness.

MARCH 7.—**Cheshire.**—Deputy County Architect, Assistant Architectural Draughtsman. Mr. H. Beswick, County Architect, Newgate-street, Chester.

MARCH 8.—**Hackney, E.**—Correspondence and General Clerk required by the Borough Council in the Borough Engineer and Surveyor's Department. Mr. Norman Scorgie, Acting Town Clerk, Town Hall, Hackney, E.8.

MARCH 10.—**London.**—Surveyor required by the Worshipful Company of Ironmongers for their London Estates. Clerk, the Company's Temporary Office, Wax Chandlers' Hall, Gresham-street, E.C.2.

✱MARCH 15.—**Cumberland.**—Second Grade Male Clerk required by the County Council. Mr. J. Forster, F.R.I.B.A., County Architect, The Courts, Carlisle.

✱NO DATE.—**London, N.7.**—Full time teacher of Mathematics (Honours Degree) with Economics as a subsidiary subject, to teach mainly in the day Building Trades School. Secretary, Northern Polytechnic Institute, Holloway, London, N.7.

✱NO DATE.—**Nigeria.**—Assistant Engineers in the Public Works Department required by the Government of Nigeria for two tours each of 12 to 18 months' service, with prospect of permanency. Crown Agents for the Colonies, 4, Millbank, London, S.W.1.

Wages in the Building Industry.

Mr. A. J. Forsdike (President of the National Federation of Building Trades' Employers), at the annual dinner of the Yorkshire Building Trades' Federation, held at York last week, said the representatives of the building trades' operatives were quite prepared to submit to the rank and file a sliding scale for the adjustment of wages in the trade. The percentages agreed to were satisfactory from the point of view both of the employer and the workman. He believed that after the scale had been submitted to the county federations and to the operatives' unions there would be reason to be proud that this matter had been adjusted without a disastrous strike, as seemed probable a few months ago. [The proposed sliding scale was given in our last issue, p. 239.]

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

AYLESBURY.—Plans passed by T.C.:—Alterations, "Ship" Inn, Walton-street, for Messrs. Roberts & Wilson; shed, West-street, for Mr. Clark.

BIDDULPH.—The Housing Committee of the U.D.C. has settled the details of the tender with Mr. O. M. Sambrook for the erection of houses.

CORK.—The Engineer has reported to the Harbour Board that he estimated the cost of rebuilding the damaged portion of the North Custom House quay at £11,500.

HASTINGS.—Plans passed by T.C.:—Rebuilding of the "Crown Inn," All Saints'-street, for Watney, Combe, Reid & Co., Mr. J. H. Howard, architect; café, Commercial-road, for Mr. E. H. Lefevre, Mr. J. Hunt, architect; alteration, 14, St. Saviour's-road, for the Rev. J. Alston Campbell, Mr. T. W. Elworthy, architect; garage at 1 and 3, Bexhill-road, for Gaze, Kane & Co., Mr. Henry Ward, architect; alter tions, garage, at 15 and 15A, Eastern-street, for Mr. V. I. Roy Stewart; conversion into four residential flats of 85, Marina, for Mr. G. H. Naunton, owner; alterations at "Ochiltree," Elphinstone-road, for Lieut. H. G. Stanton, R.N.; alterations at 57, Marina, for Mr. G. H. Naunton, Mr. J. Hunt; addition to Hastings Tramways Offices, for the Hastings Tramways Co., Mr. P. H. Oxley, architect; additions to 48, Kenilworth-road, for Miss Slaughter; garage at "Langley Place," Filsham Park, for Mr. A. W. Roberts, owner and architect; and Mr. J. S. D. Hicks, architect, a hall and reading room at Church-road, for the Rev. F. Segesser.

HULL.—A firm is negotiating with the North-Eastern Railway for 200 acres of land east of the Hull King George Dock whereon to place buildings for a new industry.

KIVETON PARK.—The R.D.C. has decided on an extension of the housing scheme at Harthill.

LONDON (BATTERSEA).—The L.C.C. has sanctioned the borrowing by the B.C. of £6,206 for sewer reconstruction work.

LONDON (CAMBERWELL).—Drainage plans passed by B.C.:—At Edison-Bell Works, Willowbrook-grove, for Mr. A. E. Thomas; at 30, Shawbury-road, for Mr. A. H. Rogers; at 184, Turney-road, for Messrs. McCollock Bros.; at 19, Selborne-grove, for Messrs. Byworth & Sons; at 23, Hill-street, for Mr. A. E. Roper; at 203 and 205, Rye-lane, for Mr. W. E. Ismay; at Corporation Flats, Old Kent-road, for Messrs. L. & W. Whitehead; at 33 to 39, Caldew-street, for Mr. E. Taylor; at Chapel, Wesson-square, for Messrs. Martin & Co.; at 47 and 49, Rye-lane, for Mr. J. B. Whinney; at 14 and 16, Basing-road, for Mr. C. P. Lawrence; at 11 and 12, Sugden-street, for Mr. W. A. Foster; at three houses, Red Post-hill, for Mr. G. F. Ellyatt.

LONDON (GREENWICH).—An application by the B.C. to borrow £150,000 for housing purposes has been sanctioned.

LONDON (GREENWICH).—Drainage plans passed by B.C.:—At Vanbrugh Castle, Westcombe Park-road, for Lieut.-Col. W. W. Farthing; at works of Messrs. Johnson & Phillips, Victoria-road, for Messrs. G. E. Weston & Sons; at premises of Charlton Engineering Co., for Mr. A. Barrett; at premises in Liskeard Gardens, for Messrs. E. F. Blow & Co.; at new elementary school, Sherington-road, for Mr. T. D. Leng.

LONDON (HACKNEY).—Plans passed by B.C.: Conversion of Dalston Theatre into picture house, for Mr. F. E. Jones; drainage at "Swan" beerhouse, 211, Well-street, for Mr. W. Simms; at 2, Gascoigne-road, for Mr. H. Davies.—It is proposed to erect a public washhouse, &c., which, together with the equipment, is estimated to cost £29,500.

LONDON (LEWISHAM).—The Justices have given consent to alterations at the "Castle" public-house, High-street, Lewisham, for Mr. F. W. Coates.

LONDON (SOUTHWARK).—Drainage plans passed by B.C.:—Miss B. Marsland, to stables, Walworth-road; Gaskell & Chambers, Ltd., to 113–114, Blackfriars-road; W. Johnson & Sons, Ltd., to 18, Union-street; London County Council, to Tabard Gardens Estate; Walter Fry, to 10, Hankey-place; John Langley, to 24 and 26, Shorncliffe-road.

LONDON (TOTTENHAM).—The U.D.C. has issued a notice of its intention to provide a new elementary school for 800 children at Vale-road.

LONGTOWN.—The Surveyor has been instructed by the local authority to prepare estimates for the improvement of Holywell bridge.—The R.D.C. has accepted the tender of Messrs. J. & R. Bell, Carlisle, for the sewerage scheme.

MANSFIELD.—The Ministry of Health has recommended the Public Works Loan Board to lend a further instalment of £30,000 in respect of the loan of £143,000 for the Bull Farm housing scheme at Mansfield.

MONAGHAN.—The Munster and Leinster Bank have purchased business premises in the Diamond, and will have them reconstructed for the accommodation of a new branch.

NEWPORT.—The Corporation Housing Committee has decided to put in hand as soon as possible 147 more houses on the Somerton estate on the duo-slab system, and another 100 brick houses on the St. Julian's estate.

NORTH BERWICK.—The T.C. has, with the consent of the Board of Health, decided to erect blocks of houses on the north and south end of the feu on Law-road, and the work is to be proceeded with at once.

PRESTON.—Plans passed by T.C.: Mr. Henry Duchworth, shed and hoarding, Skeffington-road; Mr. William Fitton, alterations, 516, New Hall-lane; Mr. Miles Myres, shop front, 66, Plungington-road; Mr. A. J. T. Ellison, roof over passage, 44, Avenham-lane; Messrs. Andrew & Dickson, outbuildings, Southern-parade; Mr. E. J. Andrew, alterations, 15, Ribblesdale-place; Mr. Percy Askew, garage and workshops, Strand-road; Mr. H. D. Hartley, bungalow, St. Andrew's-avenue.

RHYL.—The Rhyl Amusements, Ltd., have agreed with the U.D.C. to take over the Rhyl Marine Lake for a lengthy period. The company propose to carry out very extensive additions in the Marine Lake Grounds, and have also secured a large site adjoining the lake where very large schemes are to be developed in the amusement line.

SCARBOROUGH.—The T.C. has decided to prepare a town-planning scheme in connection with an area of 202 acres.

UXBRIDGE.—The Uxbridge Rural District Council is considering the question of a new sewerage and sewage disposal scheme for Harefield Parish. Messrs. W. H. Radford & Son, of Nottingham, have been instructed to prepare a scheme in conjunction with the Surveyor, Mr. E. E. T. Bolton.

WILLESDEN.—Plans passed by U.D.C.: House, 3, Sidmouth-road, for Mr. C. W. B. Simmonds; garage, 2, Crouch-road, Stonebridge Park, for Mr. W. E. Ranford; alterations, 117 and 119, Chamberlayne-road, Kensal Rise, by Messrs. Ernest Gale & Durlacher, for the Constitutional Club Committee; alterations to motor garage, 47, Hazel-road, Kensal Rise, by Messrs. S. Adams & Co., for Mr. C. Pike; alterations, 120, High-street, Harlesden, by Mr. Percy Pratt, for the Harlesden Electric Theatres, Ltd.; house, 3, Sidmouth-road, by and for Mr. C. W. B. Simmonds; alterations to printing works, 5 and 7, Canterbury-road, and 4 and 5, Cambridge-avenue, Kilburn, by Messrs. Trant Brown & Brightiff, for Messrs. Houghton & Son.

WOOTTON BASSETT.—The Cricklade and Wootton Bassett R.D.C. has accepted the tender of Messrs. E. E. Jeavons & Co., Ltd., Dudley Port, Staffordshire, for the Wootton Bassett sewerage and sewage disposal works.

WREXHAM.—A proposal to rebuild the workhouse at a cost of £100,000, has been deferred by the Board of Guardians.

FIRES.

LONGRIGGEND.—The post office at Longriggend, the adjoining public-house and a hairdresser's shop have been damaged by fire. The buildings are the property of Messrs. Chapman, Glenboig.

SHEFFIELD.—Damage estimated at £3,000 has been caused by fire at the works of Messrs. Henry Rossell & Co., Ltd., Effingham-road.

SHEFFIELD.—A serious fire has occurred at the by-product plant of Messrs. Newton, Chambers & Co., Ironfounders, Thorncliffe.

*See also our List of Competitions, Contracts, etc.

Road Making and Upkeep Machinery.

The increasing burden of the rates makes it more and more necessary that the utmost economy should be obtained in the municipal services, of which road making, repairing and maintenance form such a large part, and that this is realised by borough surveyors and others responsible for the upkeep of roads was shown at the meeting in Holborn last week of the Metropolitan District Branch of the Institution of Municipal and County Engineers, which was entirely devoted to an inspection of road sweepers and collectors, motor gulley cleaners, motor tipping wagons, and a concrete mixer. The "Karrier" sweeping and collecting machine would, no doubt, have shown better results had it been given a more reasonable task than a road strewn with sweepings and paper in some places three or four inches deep; but the satisfactory manner in which it cleaned the parts where the litter was of a depth more approximating to that met with under ordinary conditions sufficed to show its possibilities and efficiency. A "Jaeger 4 L" concrete mixer was shown mixing materials for a road foundation in Upper Montague-street. This machine (supplied by Messrs. Millars' Timber and Trading Co., Ltd.) is fitted with a power loader, and has a capacity of 4½ cubic ft. of mixed concrete, or 7 cubic ft. of unmixed material. It is equipped with a 3-h.p. petrol engine, which has the low fuel consumption of two gallons for an output of 40 cubic yds. of mixed concrete in an eight-hour day. A special feature of this machine is the rotating tilting drum, which can be easily turned over from the loading position to the discharging position and unloaded whilst it is still revolving. We understand that some 20,000 of these machines are now in use throughout the world.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue, lead and various prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

Best Stocks 5 1 6

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	3 17 0	Best Blue Pressed Staffordshire ...	12 4 0
Best Stourbridge Fire bricks	12 14 0	Do. Bullnose ..	12 14 0
		Blue Wire Cuts	10 6 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers ..	29 10 0	D'ble Str'tch'rs	38 0 0
		D'ble Headers	35 0 0
		One Side and two Ends ..	39 0 0
Headers.....	29 0 0	Two Sides and one End	40 0 0
Quoins, Bullnose and 4½in. Flats	36 0 0	Splays and Squints.....	37 10 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	18 6	per yard,	delivered 2 miles radius Paddington.
Pit Sand	24 0	,, ,,	
Thames Sand	25 0	,, ,,	
Best Washed Sand	25 0	,, ,,	
¾ in. Shingle for Ferro-Concrete	24 6	,, ,,	
¼ in. ,, ,,	25 6	,, ,,	

Per ton, delivered in London area.

	£ s. d.		£ s. d.
Best Portland Cement	4 7 6	..	4 13 0

80/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	..	..	10 0
Best Ground Blue Lias Lime	3 12	6 at rly. depot.	

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 75s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 44s. 8d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R.. per ft. cube.....	3 2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R.. per ft. cube	3 5½
Do. do. delivered on road wagons at Nine Elms Depot	3 6½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 11½
Do. do. delivered on road wagons at above stations, per ft. cube..	5 0½
White basebed, 3d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station London.	s. d.
Scappled random blocks .....Per Ft. Cube	16 0
6 in. sawn two sides landings to sizes (under 30 ft. super.) .....Per Ft. Super	10 0
6 in. rubbed two sides, ditto ..... ,,	11 2
3 in. sawn two sides slabs (random sizes) ,,	4 4
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	2 8
1½ in. to 2 in. ditto, ditto ..... ,,	2 3
HARD YORK—	
Delivered at any Goods Station London.	
Scappled random blocks .....Per Ft. Cube	10 3
6 in. sawn two sides landing to sizes (under 40ft. super.) .....Per Ft. Super	9 6
6 in. rubbed two sides ditto ..... ,,	11 6
4 in. sawn two sides slabs (random sizes) ,,	5 6
3 in. ditto, ditto ,,	4 6
2 in. self-faced random flags ..Per Yard Super	13 6

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	64 0	per standard
4 × 9	60 0	,,
4 × 8	48 0	,,
4 × 7	46 0	,,
3 × 8	48 10	,,
3 × 7	46 0	,,
2½ × 7	45 0	,,
3 × 6	43 0	,,
3 × 11	65 0	,,
2 × 11	65 0	,,
3 × 9	55 0	,,
2½ × 9	55 0	,,
3 × 4½	44 0	,,
3 × 4	44 0	,,

PLANED BOARDS.

1 × 11	70 0	
1 × 9	60 0	,,

PLAIN EDGE FLOORING.

Inches		
¾	37/6	per square
1	40/-	,,
1¼	48/-	,,
1½	60/-	,,
1¾	72/-	,,

TONGUED AND GROOVED FLOORING.

Inches		
1	48/-	per square
1¼	60/-	,,
1½	72/-	,,

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	35/-	per square
¼	39/-	,,
1	50/-	,,

BATTENS.

Inches	s. d.	
¾ × 2	4 9	per 100 ft.

SAWN LATHS.

Per bundle			0 5 9		
Dry Wainscot Oak, per ft. super, as inch	0 3 6	to	0 4 0		
¾ in. do. do.	0 3 0	..	—		
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 2 6	to	0 3 0		
Cuba Mahogany	0 4 0	to	0 4 6		
Teak (Rangoon, Moulmein or Java), per load... ..	75 0 0	to	85 0 0		
American Whitewood planks, per ft. cube ..	0 18 0	to	1 4 0		
Best Scotch Glue, per cwt.	10 0 0	..	—		
Liquid Glue, per cwt.....[	5 8 0	..	6 15 0		

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	56 10 0
,, ,, ,,	22 by 12	46 0 0
First quality ,,	22 by 11	42 10 0
,, ,,	20 by 12	42 0 0
Best Blue Portmadoc	20 by 10	36 10 0
,, ,,	18 by 10	29 10 0
First quality ,,	18 by 9	24 5 0
,, ,,	16 by 10	22 15 0
,, ,,	16 by 8	18 0 0

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district.....	7 15 0
Ditto hand-made ditto.....	8 10 0
Ornamental ditto	7 7 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

	£ s. d.
JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	
R. S. Joists, cut and fitted	28 0 0
Plain Compound Girders	30 0 0
Stanchions	32 0 0
In Roof Work	36 0 0

WROUGHT-IRON TUBES AND FITTINGS—(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

	Sizes up to and including ¼ in. Tubes.	Sizes up to and including 2in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	+ 7½	+ 5	— 5	— 2½	— 17½
Water	+17½	+15	Net	+ 6½	— 15
Steam....	+28½	+26½	+ 5	+ 16½	— 12½
Gal.Gas....	+32½	+30	+ 5	+ 22½	— 7½
,, Water	+45	+42½	+ 10	+ 33½	— 5
,, Steam	+57½	+55	+ 15	+ 45	— 2½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts..	6 10	.. 4 10	.. 5 9½
2½ in. ,, ..	7 10½	.. 5 4	.. 7 3
3 in. ,, ..	9 8½	.. 5 9½	.. 8 8½
3½ in. ,, ..	10 9	.. 7 3	.. 10 2
4 in. ,, ..	11 9½	.. 8 2½	.. 11 7½

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	5 9	.. 3 0	.. 4 2
2½ in. ,, ,, ..	6 4	.. 3 7	.. 5 0
5 in. ,, ,, ..	7 6	.. 4 6	.. 6 8
3½ in. ,, ,, ..	9 1	.. 5 3	.. 7 9
4 in. ,, ,, ..	10 0	.. 6 6	.. 9 6

L.C.C. DRAIN PIPES,—9 ft. lengths London Prices. per yd.: 4 in., 14/-. ..5 in., 17/9. .. 6 in., 21/5.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	32 10 0	to	33 10 0
Staffordshire Crown Bars — good merchant quality	33 0 0	..	35 0 0
Staffordshire "Marked Bars"	34 10 0	..	36 10 0
Mild Steel Bars	27 0 0	..	29 0 0
Steel Bars. Ferro-Concrete quality, basis price ..	27 0 0	..	29 0 0
Hoop Iron, basis price ..	35 0 0	..	37 0 0
,, ,, Galvanised ..	50 0 0	..	55 0 0
Sheet Iron, and Soft Steel Black—			
Ordinary sizes to 20 g.	35 0 0	..	37 0 0
,, ,, ,, 24 g.	36 0 0	..	38 0 0
,, ,, ,, 26 g.	38 0 0	..	39 0 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—			
Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	45 0 0	..	46 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.....	46 0 0	..	48 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g...	48 0 0	..	50 0
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9ft. 20 g.	35 0 0	..	36 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	36 0 0	..	37 0 0
Ordinary sizes, 6ft. to 9ft. 26 g.	38 0 0	..	40 0 0
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker ..	42 0 0	..	43 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	43 0 0	..	44 0 0
Best Soft Steel Sheets 26 g.	44 0 0	..	46 0 0
Cut Nails, 3in. to 6in. ..	42 0 0	..	44 0 0

(under 3in. usual trade extras.)

LEAD, &c.

	Delivered in London. £ s. d.		£ s. d.
LEAD Sheet, English, 4 lb. and up	34 0 0	..	—
Pipe in coils	34 10 0	..	—
Soil Pipe	37 0 0	..	—
Compo pipe	38 0 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	15 0 0	..	—
Do., ex country, carriage forward..... per ton	16 0 0	..	—
COPPER—			
Strong Sheet ....per lb.	0 2 3	..	—
Thin ,, ... ,,	0 2 4	..	—
Copper nails ..... ,,	0 2 3	..	—
Copper wire ..... ,,	0 2 4	..	—
TIN—English Ingots ,,	0 2 0	..	—
SOLDER—Plumbers' ,,	0 1 1	..	—
Tinmen's..... ,,	0 1 4	..	—
Blowpipe ..... ,,	0 1 6	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	4½d.	32 oz. fourths	10½d.
,, thirds	5d.	,, thirds	1/-
21 ,, fourths	6½d.	Fluted, Obscured and	
,, thirds	7½d.	Enamelled Sheet.	
26 ,, fourths .. .	8d.	15 oz.	7d.
,, thirds	9½d.	21 ,,	9d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	5½d.
3/16 Rough rolled	6½d.
¼ Rough rolled	7½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7½d.
Ditto, tinted	9½d.
Rolled Sheet	6½d.
White Rolled Cathedral.....	6½d.
Tinted do.	7½d.

Cast Plate is ½d. extra on the price of rough rolled.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil in pipes..... per gallon	0 3 5
,, ,, ,, in barrels .... ,,	0 3 6
,, ,, ,, in drums .... ,,	0 3 7
Boiled ,, ,, in barrels .... ,,	0 3 11
,, ,, ,, in drums .... ,,	0 4 1
Turpentine in barrels ..... ,,	0 5 9
,, in drums (10 gall.) .. ,,	0 6 0
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	59 10 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots .....per ton delivered	85 0 0
Red Lead, Dry (packages extra) .. per ton	45 0 0
Best Linseed Oil Putty ..... per cwt.	0 19 0
Filocol..... per cwt.	0 18 0
Size. X D Quality..... fkn.	0 5 9

VARNISHES, &c.

	Per gallon. £ s. d.
Oak Varnish.....Outside	0 15 0
Fine ditto ..... ditto	0 17 2
Fine Copal ..... ditto	1 1 6
Pale Copal ..... ditto	1 2 6
Pale Copal Carriage ..... ditto	1 4 6
Best ditto ..... ditto	1 14 6
Floor Varnish..... Inside	0 19 0
Fine Pale Paper ..... ditto	0 18 0
Fine Copal Cabinet ..... ditto	1 2 6
Fine Copal flatting ..... ditto	1 0 6
Hard drying Oak ..... ditto	0 18 0
Fine Hard drying Oak ..... ditto	0 19 0
Fine Copal Varnish ..... ditto	1 0 6
Pale ditto ..... ditto	1 2 6
Best ditto ..... ditto	1 14 6
Best Japan Gold Size.....	0 12 6
Best Black Japan	0 18 0
Oak and Mahogany Stain (water)	0 17 6
Brunswick Black	0 11 9
Berlin Black.....	0 16 6
Knotting (patent)	1 16 0
French and Brush Polish	1 8 0
Liquid Dryers in Terebine	0 13 6
Cuirass Black Enamel	0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	22	0
Add if in clay	" "	2	0
Add for every additional depth of 6 ft.	" "	1	6
Planking and strutting to trenches	per foot super	0	7½
Do. to sides of excavation, including shoring	" "	1	6

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	55	0
Add if in underpinning in short lengths	" "	10	0
Add if in floors 6 in. thick	" "	4	0
Add if in beams	" "	5	0
Add if aggregate 1 : 2: 4	" "	15	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	4	6

BRICKLAYER.

		£	s	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	50	15	0
Add if in stocks	"	12	10	0
Add if in Staffordshire blues	"	34	10	0
Add if in Portland cement and sand	"	4	15	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0 1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	" "	0	0 3½

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	" "	0	1 0
Axed in stocks	" "	0	2 0
Rubbed and gauged jointed in putty camber or segmental	" "	0	7 0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1 8
Setting ordinary register grates and stoves	each	1	5 0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	6	15 0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	9	0
Three-quarter-inch vertical damp course	" "	14	3
One inch on flats in two thicknesses	" "	12	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	6

MASON.

		s.	d.
York stone templates fixed	per foot cube	22	0
York stone sills fixed	" "	35	0
Bath stone and all labour fixed	" "	16	9
Portland stone fixed	" "	26	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	98	0
Do. 20 in. × 10 in. Do. Do.	"	115	0
Do. 24 in. × 12 in. Do. Do.	"	117	6

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	9	0
Do. joists	" "	10	0
Do. roofs, floors and partitions	" "	11	3
Do. trusses	" "	13	6

		¾"	1"	1¼"	1½"
Deal rough close boarding	per sq.	60/-	81/-	100/-	108/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	68	0
Do. to beams	per ft. sup.	1	10
Centres for arches	"	2	4
Gutter boards and beams	"	1	9

FLOORING.

		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		82/-	104/-	120/-
Do. tongued and grooved	"		88/-	110/-	127/-
Do. matchings	"	74/-	89/-		
Moulded skirting, including backings and grounds	per ft. sup.	2/4	2/8	3/2	3/8

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	2	0
Two Do. Do. Do.	" "	2	6
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	5	6

DOORS.

		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/8	2/11	3/1
Four-panel Do.	"	3/-	3/4	3/7
Two-panel moulded both sides	"	3/4	3/7	3/10
Four-panel Do. Do.	"	3/8	3/11	4/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	22	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	2/3	2/5	2/9
Deal shelves and bearers	"	2/-	2/2	2/3
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

		1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets		3/4	4/-	4/8	—	—
Deal strings wrot in both sides and framed	"	4/6	4/9	—	—	—

		s.	d.
Housings for steps and risers	each	1	0
Deal balusters, 1 in. × 1½ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	3
Add if ramped	" "	12	6
Add if wreathed	" "	25	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	9d.	Rim locks	2/6
Sash fasteners	1/-	Mortice locks	5/6
Casement fasteners	1/6	Patent spring hinges and letting in to floor and making good	20/-
Casement stays	1/3		
Cupboard locks	1/6		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	32	0
Plain compound girders	"	36	0
Do. stanchions	"	39	0
In roof work	"	43	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	2/-	2/6	3/9	4/3
Ogee Do. Do.	"	2/6	3/3	4/-	5/-
Rain-water pipes with ears	"	2/11	3/9		
Extra for shoes and bends	each	4/7	6/3		
Do. stopped ends	"	2/-	2/6	3/9	4/3
Do. nozzles for inlets	"	2/3	2/9	4/-	4/6

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	58	0
Do. Do. in flats	"	53	0
Extra labour and solder in coated cesspools	each	7	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	2	1
Copper nailing	" "	0	8

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/1	1/9	2/-	3/7	4/6	
Do. service	"	1/8	2/2	2/8	4/3		
Do. soil	"						7/2
Bends in lead pipe	each					3/7	9/-
Soldered stop ends	"	1/4	1/10	2/3	3/2	3/10	
Red lead joints	"	1/-	1/2	1/5	2/1	2/8	5/5
Wiped soldered joints	"	3/2	3/10	4/6	5/5	7/2	10/10
Lead traps and cleaning screws	"				16/2	21/7	
Bib cocks and joints	"	7/6	11/3	18/-	48/-		
Stop cocks and joints	"	18/-	20/-	30/-	75/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	4
Do. Do. Sirapite	" "	3	9
Do. Do. Keen's	" "	5	0
Add sawn lathing	" "	2	0
Add metal lathing	" "	3	6
Portland cement screed	" "	2	11
Do. plain face	" "	4	9
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	11

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	6
26 oz. Do.	" "	1	9
Obscured sheet	" "	1	11
⅛ in. rolled plate	" "	1	1½
¼ in. rough rolled or cast plate	" "	1	2½
¼ in. wired cast plate	" "	1	9

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	6
Knotting and priming	" "	1	0
Plain painting 1 coat	" "	1	6
Do. 2 coats	" "	2	4
Do. 3 coats	" "	3	2
Do. 4 coats	" "	4	0
Graining	" "	3	0
Varnishing twice	" "	2	6
Sizing	" "	0	4
Flatting	" "	0	9
Enamel	" "	2	0
Wax polishing	per foot sup.	0	11
French polishing	" "	1	9
Preparing for and hanging paper	per piece	2/- to 5/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TRADE NEWS.

In these days of difficulty of securing supplies of building materials it is pleasing to know that plywood—for which there is a considerable demand—may be obtained from stock in almost unlimited quantities. This material is being extensively used for purposes for which, in order to obtain the required strength, thicker timber would otherwise be used, such as partitions, door panels, floors, ceilings, &c., and its lightness and the facility with which it can be cut and fixed without fear of splitting or warping results in economy of labour and time. The London Plywood Manufacturing Co., Ltd., of 384, Old-street, E.C. 2, inform us that they have in stock some five million feet of plywood cut to sizes for all kinds of panelling and partitions. A sample of satin walnut plywood, built up in five layers, which the firm has sent us is extremely strong, and in appearance is suitable for the best class of work.

Messrs. Fred Hodge, Ltd. (724, Holloway-road, N. 19) have issued a catalogue in which is illustrated a fine series of chimney-pieces, baths, lavatories, and other house fittings. The fireplaces and chimney-pieces are specially interesting and reasonable in price, and we are informed that over one hundred different specimens may be seen at the firm's showrooms at Holloway-road.

In order to keep building materials' merchants in touch with the Beaver Board organisation, the Beaver Board Company, Ltd., of 133-136, High Holborn, W.C., have commenced publication of *The Beaver Link*, which is to be issued monthly. The first issue of the booklet contains several very readable articles bearing on this well-known wall-lining material, and is well illustrated.

Messrs James Austin & Sons, Ltd., of St. George's Mills, Hoxton-square, N. 1, manufacturers of sash and blind lines, have been established in Hoxton since 1777, and have just issued a most interesting brochure, entitled "Ye Corde Plaiters of Hocheston," describing the work and progress of the firm during three generations. It is interesting to note that the life lines in connection with the "Guardian Angel" parachutes, used so extensively by the Royal Air Force during the war and since, were manufactured by Messrs. Austin. The firm also manufactures the well-known "Anchor," "Crown," "Enterprise," "Eagle," "Star," "Albert," "Eclipse," and "Goliath" sash and blind cords, and was one of the first to use plaiting machines. The specialities of the firm will be on view at the forthcoming Building Trades' Exhibition at Olympia (stand 190, Row J), where a model of the first cord-plaiting machine will also be shown.

The efficiency of all systems of artificial lighting is affected very largely by the design of the fixtures employed and the materials used in their construction. The General Electric Co., Ltd., of Queen Victoria-street, E.C., have devoted considerable attention to the science of illumination, and have now introduced "Superlux," a scientifically designed glassware combining good reflecting and diffusing qualities with a very low absorption factor. "Superlux" is a pure white-cased glassware with an "eggshell" finish. The dull, unpolished inner or reflecting surface is produced in the process of manufacture and is unaffected by cleaning. The outer surface has a subdued polish which, combined with the colour and texture of the glass, produces a most pleasing effect. This glassware is manufactured in a variety of forms and sizes for use with lamps of every size, and is applicable to direct, semi-indirect and diffusing systems of lighting. The price of "Osram" gas-filled lamps has now been considerably reduced by the General Electric Co.

The Improved Wood Pavement Co., Ltd., have removed from 46, Queen Victoria-street, E.C.4, to Blackfriars House, New Bridge-street, E.C.4.

A Builder's Estate.

The late Mr. James Johnson, retired builder, of Northumberland, left estate valued at £10,826.

NEW COMPANIES.

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd. Company Registration Agents, of 116 & 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

HENRY WORKMAN, LTD. (171,162). Registered November 1. Woodchester Saw Mills, near Stroud, Glos. Timber merchants. Nominal capital, £50,000.

THERESIAS, LTD. (171,241). Registered November 4. 116, Victoria-street, S.W. 1. Contractors and builders. Nominal capital, £1,200.

SOLOMON & RENNY, LTD. (171,254). Registered November 5. Oxford House, Oxford-avenue, Plymouth. Builders and contractors. Nominal capital, £1,000.

TRUETT & STEEL, LTD. (171,385). Registered November 12. Builders, decorators and contractors. Nominal capital, £5,000.

TRIAD COMPANY, LTD. (171,425). Registered November 15. 39, Victoria-street, Westminster. Manufacturers of paints, glues and colours. Nominal capital, £3,000.

TYSONS (CONTRACTORS), LTD. (171,417), Registered November 15. 43, Dryden-streetl Liverpool. Builders and contractors. Nomina capital, £10,000.

WATNALL BRICK AND TILE CO., LTD. (171,448). Registered November 16. 11, Ironmonger-lane, E.C. 4. Nominal capital, £20,000.

WILLIAM WILLETT, LTD. (171,452). Registered November 16. Builders and contractors. Nominal capital, £50,000.

WENSLEYDALE LIMESTONE QUARRIES, LTD. (171,726). Registered November 29. Bentham, buildings, Middlesbrough. Nominal capital £21,000.

SMITH & SON (RAUNDS), LTD. (171,863). Registered December 6. Thorpe-street, Raunds, Northampton. Builders and contractors. Nominal capital, £5,000.

UNIQUE HOUSES, LTD. (171,883). Registered December 7. Builders, contractors, and decorators. Nominal capital, £1,000.

A. WALKER (MIRFIELD), LTD. (171,869). Registered December 7. Greenside-road, Mirfield, Yorks. Contractors and builders. Nominal capital, £3,000.

J. P. WILLIAMS, LTD. (171,876). Registered December 7. 87, Lancaster-road, Notting Hill, W. 11. Builders and contractors. Nominal capital, £10,000.

THOMPSON & HALLIMAN, LTD. (172,443). Registered January 5. Joiners, builders and contractors. Nominal capital £1,500.

SMITH'S HOUSING CO., LTD. (172,600). Registered January 14. 103, Harrow-road, Leicester. Builders, contractors and decorators. Nominal capital £5,000.

ANDREWARTHA & CO., LTD. (172642). Registered January 17. 31, Old Town-street, Plymouth. Dealers in glass, oil, colour, white lead, and varnishes. Nominal capital £6,000.

S. HAYWORTH & SONS, LTD. (172,637). Registered January 17. 4, Birkbeck-road, Kingsland, N. Builders, decorators, &c. Nominal capital £5,000.

TIMBERTOWN BRICKWORKS, LTD. (172,639), Registered January 17. Slough Trading Estate, Slough, Bucks. Nominal capital £6,000.

VARLEY-WOODS, LTD. (172,641). Registered January 17. 18, Berners-street, W.1. Heating engineers. Nominal capital £100.

FIELD'S LITTLEWORTH TILERIES, LTD. (172,655). Registered January 18. Guildhall Annexe, 2, King-street, Cheapside, E.C. Manufacturers of bricks, tiles and pipes, &c. Nominal capital £24,000.

THAMES SAND AND GRAVEL CO., LTD. (172,690). Registered January 19. 12, Queen-street, E.C.4. Nominal capital £10,000.

J. W. SANDALL & CO., LTD. (172,702). Registered January 20. Sylvester Works, Sharrow Vale, Sheffield. Builders and contractors. Nominal capital £5,000.

JAMES LEES & SON (DARLASTON), LTD. (172,704). Registered January 20. Slater-street, Darlaston, Stafford. Builders and contractors. Nominal capital £5,000.

TENDERS.

Communications for insertion under this heading should be addressed to 'The Editor," and must reach him *not later than first post on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*

ANDOVER.—For the erection of a timber footbridge across the river near Fleelands, for the R.D.C. Mr. John Wormald, Surveyor :—

*W. B. Spratt, Wherwell, Andover	£212 10
F. Beale & Sons, Andover	229 17
Bourne & Jenkinson, Andover	234 0

BALDOCK.—For construction of Pesthouse-lane sewer, for the U.D.C. :—

*C. Ball	£1,798 0
Willmott & Sons	2,972 0
Rahan & Sons	2,592 15

BOOTLE.—For erection of 212 concrete houses, for the T.C. :—

*R. Costain & Sons	£205,440

BRIDLINGTON.—For the extension of the glass dome on the New Spa, and alterations thereto, for the T.C. Lieut.-Colonel C. G. Bradley, A.M.Inst.C.E., M.Inst.M.E., Borough Surveyor; quantities by Borough Surveyor :—

*W. G. Padgett, Hull and Bridlington	£1,324

CROYDON.—For the reconstruction of No. 130, High-street, for an ex-Service men's club. Mr. F. W. Rees, M.S.A., architect, 44, Park-lane, Croydon :—

*W. A. Scott, Croydon	£1,015 15
Kimber & Sons, Croydon	1,097 0
Bridge & Co., Croydon	1,170 10
R. Mansell, Croydon	1,295 0
Grace & Marsh, Croydon	1,314 0
H. D. Ebbutt, Croydon	1,360 0

GOSFORTH.—For alterations and extensions to the Fire Brigade Station, for the U.D.C. Mr. George Nelson, A.M.I.C.E., Borough Engineer and Surveyor; quantities by Engineer and Surveyor :—

*Wm. C. Flech, Gosforth	£585 0 10
J. & F. Rowell, Newcastle-on-Tyne	673 13 0
Osborne Bros., Newcastle-on-Tyne	701 8 3
J. W. Dodds, Newcastle-on-Tyne	830 6 0
Lumsden & Reed, Newcastle-on-Tyne	951 3 0

GOSFORTH.—For extending the existing 12 in. pipe sewer in Haddricksmill-road, for the U.D.C. Mr. George Nelson, A.M.I.C.E., Engineer and Surveyor.; quantities by Engineer and Surveyor :—

*G. E. Simpson & Co., Newcastle-on-Tyne	£249 2 0
Dyson, Lindsley & Co., Chesterle-Street	251 12 6
W. Robson, Newcastle-on-Tyne	256 7 0
W. Turner, Newcastle-on-Tyne	373 0 0

HARROGATE.—For erection of 110 houses, for the T.C. :—

*Robert McAlpine & Sons, Huddersfield	£95,413

HAYWARD'S HEATH.—Erection of 20 houses, for the Housing Committee :—

Stevens, Horlock & Co., Hackney	£18,160
J. Bodle, Ltd., Eastbourne	20,284
R. Cook & Sons, Crawley	20,700
H. White, Hayward's Heath	21,300
T. Divall, Chailey	22,737
H. Meckhonick, London	24,520
H. & J. Taylor, Lewisham	27,998

(Referred to Housing Commissioner.)

KNARESBOROUGH.—For construction of (*a*) a carriageway at Parnel, and (*b*) erection of 10 houses at Parnel, for the R.D.C. :—

*(*a*) Balmfirth Bros., Huddersfield	£600
*(*b*) R. Redyard & Sons, Leeds	3,355

LEAVESDEN.—For ladders, trestles, and steps at Leavesden Mental Hospital, for the Metropolitan Asylums Board :—

*Drew, Clark & Co.	£100 5 8
J. H. Heathman	102 4 0
W. Newberry & Son	118 0 6
Pratt & Co., Ltd.	119 16 0

LEICESTER.—For the erection of 94 houses on the Coleman-road Estate, for the City Council. Architects: Block I, Mr. A. J. Wood, A.R.I.B.A.; Block II, Messrs. Pick, Everard & Keay; Block III, Messrs. S. Harrison & Sons. Quantities by Mr. John T. Burt, F.S.I. :—

Block I (32 *houses*).

‡E. Coulson	£28,123 7
†W. M. Sharp & Sons, Ltd.	30,257 0

Block II (32 *houses*).

†J. Ellingworth & Sons	29,987 0

Block III (30 *houses*).

†G. W. Pratt	26,809 0

‡ Withdrawn.
† Provisionally accepted.

LIMBURY.—For the erection of 24 houses, for the Luton R.D.C. Messrs. Manning & Steel, architects, 5, George-street West, Luton :—The scheme has been postponed for at least six months.

LITHERLAND (NEAR LIVERPOOL).—For the erection of a factory, for Messrs. Lewiss, Ltd., Liverpool. Messrs. G. de C. Fraser & Ainley, architects, 26, North John-street, Liverpool :—

*W. E. Tyson, Ltd., Liverpool	£71,516	0	0
W. Hall & Son, Ltd., Liverpool	72,000	0	0
I. Dilworth & Sons, Liverpool	73,120	0	0
F. Mitchell & Son, Ltd., Manchester	73,759	19	4
Unit Reinforced Construction Co., Manchester	73,960	0	0
E. Burns & Son, Liverpool	74,477	0	0
W. Tomkinson & Sons, Liverpool	74,477	0	0
W. Thornton & Sons, Liverpool	74,850	0	0
J. Gerrard & Sons, Manchester	75,500	0	0
J. Tyson, Liverpool	75,897	0	0
Smith & Briggs, Manchester	76,000	0	0
R. Carlyle & Co., Manchester	76,497	0	0
R. Costain & Sons, Liverpool	77,650	0	0
Henshaw & Sons, Liverpool	77,953	0	0
Travis & Co., Liverpool	78,175	0	0
H. E. B. Greene & Co., Liverpool	79,000	0	0
W. Jones & Sons, London	80,486	0	0
Sir R. McAlpine & Sons, Manchester	81,800	0	0
Frank Hayes, Liverpool	84,082	7	0

LONDON.—For supply of (*a*) stoneware pipes, and (*b*) granite kerb to the Hammersmith B.C., for the Wormholt housing estate :—

*(*a*) W. H. & J. Slater, Derby	£809	3	10
*(*b*) C. H. MacGuinness & Co., S.W.1	1,708	5	0

LONDON.—For cleaning and cutting 150,000 old wood blocks, for the Westminster C.C. :—
*Wood Paving Block Renovator Co. £787 10

LONDON (MILE END).—For taking out of foundations, &c., to four existing boilers, and forming foundations and setting two new boilers at the Institution, Bancroft-road, Mile End-road, for the Mile End Board of Guardians. Mr. Edmund J. Harrison, architect, 23, Berkeley-road, Crouch End, N.8 :—

*W. Neil & Son, Bow	£963
A. E. Russell, Leytonstone	1,262
J. Fox & Sons, Balham	1,376
H. Truscott, Forest Gate	1,384
T. Warrington, Manchester	1,693
H. Windsor & Co., Fulham	1,695
S. A. Francis, Peterborough	1,900

LONDON.—For foundation work for weighbridge, for the Hackney B.C. :—

*W. Stapleton & Sons	£479
W. Silk & Son	487
L. H. & R. Roberts	565

LONDON.—For supply of wood blocks to the Lambeth B.C. :—
*Improved Wood Pavement Co...10,000 blocks at £25 per 1,000.
*W. Christie & Co...30,000 blocks at £24 per 1,000.

LONDON.—For repairs to Cemetery Lodge, for the Lambeth B.C. :—
*Hayward Bros. £122

LONDON.—Supply of "Tarvia" to the Lambeth B.C. :—
*Bristowe & Co. 1s. 7d. per gall.

LUTON.—For painting, decorating, &c., to a portion of the exterior of the Union House, and premises in Dunstable-road, for the Guardians. Mr. R. Godfrey, architect, Prudential Chambers, Luton :—

*F. Tompkins, 75, Church-street	£175	0	0
E. Kiteley & Son, High Town-road	196	12	6
J. Garrett, Cowper-street	280	0	0
H. Sturgess, Clarendon-road	290	0	0
Frost & Carter, Dale-road	351	10	0
H. Bavister, Malvern-road	397	10	0
J. George, Belmont-road	400	0	0

(All of Luton.)

MILLISLE.—For the erection of a Masonic Hall at Millisle, Co. Down, Ireland. Mr. Chas. A. Aickin, architect, 20, Rosemary-street, Belfast :—

*T. McKee & Sons, Belfast	£2,840
Robt. Garrett, Ballywalter	3,092
Joseph Johnston, Belfast	3,156
Jno. Hanna & Co., Newtownards	3,500
Cairns Bros., Belfast	3,500
Jno. Rainey, Belfast	3,550
Samuel Agnew, Belfast	5,639

NOTTINGHAM.—For painting at the Central Homes, Hartley-road, for the B.G. :—

Internal painting—			
W. Read & Son, Nottingham	£365	0	
External painting—			
W. H. S. Rushton, Nottingham	150	2	

SAFFRON WALDEN.—Erection of 33 houses on the Albden-road site, for the T.C. :—
*Coulson & Son, Cambridge £31,235 10

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